EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON STRESS AND ANXIETY AMONG PATIENTS UNDERGOING CARDIAC SURGERIES

Dissertation Submitted To

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY

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IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING

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A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON STRESS AND ANXIETY AMONG PATIENTS UNDERGOING CARDIAC SURGERIES IN DR. KAMAKSHI MEMORIAL HOSPITAL AT CHENNAI 2013 - 2014.

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ABSTRACT

ABSTRACT

The stress and anxiety is a human reaction to any unknown situation. Stress and anxiety can affect each person in different ways which include feeling of fear, disappointment, anger, depression or helplessness. Preoperative stress and anxiety are common in surgical patients. Progressive Muscle Relaxation Therapy (PMRT) is a stress and anxiety management technique developed by Chicago physician Edmund Jacobson in 1920s. It is based upon the premise that mental calmness is a natural result of physical relaxation.

A study was conducted to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries in Dr. kamakshi Memorial Hospital at Chennai. The hypothesis formulated was that there is significant relationship between the progressive muscle relaxation therapy on reduction of stress and anxiety among patients undergoing cardiac surgeries. The review of literature included the related studies which provide a strong foundation for the study including the basis for conceptual framework and formation of tool.

The research design used for this study was pre experimental one group pre test post test design. It was carried out with 30 samples that fulfilled the inclusion criteria. Purposive sampling technique was used to select the samples. An interview schedule was used to assess the pre intervention and post intervention level of stress and anxiety among patients undergoing cardiac surgeries. The progressive muscle relaxation therapy was given for the duration of 20 to 30 minutes. The post intervention was conducted at the end of 5^{th} day by using same tool.

The analysis revealed that the pre intervention stress mean score was 29.93 with the standard deviation of 3.46 and the post intervention stress mean score was 18.70 with standard deviation of 3.64. The pre intervention anxiety mean score was 64.63 with standard deviation of 5.34 and the post intervention anxiety mean score was 49.13 with standard deviation of 8.57. The paired ‘t’ value was 12.58 and 10.6 which showed highly significant at $p<0.0001$ level. Thus it indicates that the effectiveness of progressive muscle relaxation therapy on reduction of stress and anxiety among patient undergoing cardiac surgeries. So the researcher hypothesis was accepted for this study.

INTRODUCTION

CHAPTER I

INTRODUCTION

"Every heart that beats strongly and cheerfully has left a hopeful impulse behind it in the world and bettered tradition of mankind."

R.L.Stevenson

The heart is a muscular organ that beats approximately 60-100 beats per minute and almost 3 billion times during the life span of a human being. From the time of consumption oflife and till death the human heart continuously beats. The heart pumps with full force and supplies blood and nutrition to the body to sustain life. If it stops pumping or does not pump with sufficient force life comes to an end. The heart is the center of the circulatory system. This cardiac system consists of a web of blood vessels such as arteries, veins, and capillaries. These blood vessels carry blood to and from all parts of human body.

The heart is dynamic part to human health and nearly everything that goes on in the body. Without the heart's circulatory action blood can't move all over the body. The blood carries the oxygen and nutrients that the human organs need to work well. A healthy heart supplies the body with the right amount of blood at the rate needed to work well. If any disease or injury occurs in the heart it affects the circulatory system and the body organs can't receive enough blood to work normally.

Less than a century ago heart disease was extremely arare disease. Today it is the major cause of death of more people in the world than all other deadly diseases taken together. The term cardiovascular disease covers a large number of diseasesthat can directly affect the heart and the blood vessel system. It especially affects the veins and arteries of the heart which leads to an end. From 1998 to 2008, the death rate of cardiovascular diseases has been declined by 30.6 percent. Every year close to 475,000 persons have a recurrent heart attack.

According to the American Heart Association (2012) state that more than one in three American adult have one or more types of cardiovascular disease. High blood pressure is the most frequently seen disease in these individuals. Additionally it was estimated that nearly half of those with cardiovascular disease are under the age of 60.

According to Dr. Argaret Chan, Director-General of WHO explained more than 40% of adults in many countries are estimated to have high blood pressure. Most of these people remain undiagnosed, although many of these cases could be treated with low-cost medications, which would significantly reduce the risk of death and disability from heart disease.

The progress of cardiac surgeries will help to prevent 80% of the cardiac problems. Cardiac surgeries have undergone a dramatic advancement during the past 3 decades. Cardiovascular surgeries are the surgical procedures which are done on the heart or great vessels by skillful cardiac surgeons. In worldwide the cardio pulmonary bypass techniques have reduced the mortality rate and the number of cardiac operations performedincreased every year. Now a days Robotics cardiac surgeries are also being developed.

Surgery is a unique human experience that creates stress and anxiety which affects both physiological and psychological aspect of an individual. Anxiety is common among patients undergoing cardiac surgeries. In cardiacpatient's effects of anxiety are due to an exaggerated sensitivity to exogenous stress, which has been shown to have profound effects on the heart.Additionally patients with anxiety often exhibit an exaggerated systemic response to stress characterized by an abnormally increased production of catecholamines, which can result in increased myocardial oxygen demand due to elevations in heart rate, blood pressure and the rate of ventricular contraction.

Methods of coping with stress are a plenty. The body's natural relaxation response is a powerful antidote to stress. The progressive muscle relaxation therapy can produce a deep sense of relaxation. When muscles are relaxed, they do not

require much oxygen as when they are tense. This allows rerouting of blood flow from the tense muscles to other areas of the body which reduces many of the unpleasant physical effects of anxiety.Practicing progressive muscle relaxation strengthens a person psychologically and enhances self esteem by increasing efficiency.

NEED FOR THE STUDY

Cardiovascular disease is the prominent cause of death in India and the leading cause of death worldwide. Previously the cardio vascular disease mainly affected the high-income countries than low and middle-income countries, such as India. The death rates that are increasing disproportionately compared to high-income countries. An estimated 17.3 million people died from cardiovascular disease in 2008 representing 30% of all global deaths. Of these deaths, an estimated 7.3 million were due to coronary heart disease and 6.2 million were due to stroke. According toDr. BhimalChattergi, former cardiac consultant, All India Institute of Medical Sciences, at New Delhi explained that “cardiovascular disease is the largest epidemic of heart disease in the world”.

Each year 7,95,000 people experience a new or recurrent heart attack. Among them 6,10,000 peoples have first attack and 1,85,000 have recurrent attacks. Mortality data from 2007 indicates that cardiovascular diseases accounted for 1 of every18 deaths in the United States. From 1997 to 2007, the total cardiovascular patient death rate is 44.8%.

In the year 1980 the number of coronary artery surgery was about 856 per year. It is currently around 1.106 per year. Heart valve procedures increased from 400 to 597 surgeries per year. It is growing 36.7% when compared to the 1990s. Repair of congenital heart disease also had a significant increase of 50.8% in relation to the last decade. Global mortality average rate, which at baseline was 7.5%, is currently at 7.0% and 4.9% among elective procedures. In coronary artery bypass graft surgerythe current average mortality rate is 4.8% and 8.5% in valve surgery and the repair of congenital heart disease accounts was 5.3%.

Cardiac surgeries are a stressful event for many patients. Many factors contribute to the patient's level of stress and anxiety such as previous experience, pain, anxiety, unfamiliar environment and fear. Stress produces a physiological and biochemical response that is unique for each person with respect to duration, intensity, and overall impact. This response is elicited when stressors, such as pain, anxiety ora combination thereof are physically and psychologically demanding for the patient.The psycho physiological stress response involves activation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system. It is characterized by increased heart rate, blood pressure, and cardiac output. The degree of the physiological stress response reflects the stress perceived and experienced. Obviously this response increases the workload on a cardiovascular system that may be already compromised.

Lane. D, et al., (2000) evaluated the association between anxiety, depression and recurrent Coronary Heart Disease events happen during the first 12 months subsequent to a episode of Myocardial Infarction. Among 288 patients 82 patients experienced recurrent coronary heart disease events including 27 cardiac fatalities during follow up.

By using progressive muscle relaxation therapy one can counter these physical changes and sensations to achieve a "relaxation response". A relaxation response comes from using relaxation techniques to calm the body. During progressive muscle relaxation therapy it enables the person to breath slowly, heart rate and blood pressure also decreases. When muscles are relaxed, they do not require as much oxygen as when they are tense. This allows redirection of blood flow from the tense muscles to other areas of the body it reduces many of the unpleasant physical effects of anxiety. Relaxation techniques not only decrease stress and anxiety levels. It improves the quality of life by giving a mental clarity that helps a person in taking quick decisions and improving efficiency to deal with problems and giving more energy and reducing negative emotions like anger and frustration.

During the clinical investigation the investigator identified that many patients undergoing cardiac surgeries suffering from stress and anxiety. Patient education regarding preoperative exercise is the best way to prevent stress and anxiety. In addition to anti–anxiety drugs the relaxation techniques can also be taught to such patients to reduce the anxiety levels more effectively. This had motivated the researcher to conduct this study, regarding progressive muscle relaxation therapy on reduction of stress and anxiety among patient undergoing cardiac surgeries.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries in Dr.Kamakshi Memorial Hospitalat Chennai.

OBJECTIVES

1. To assess the pre intervention level of stress and anxiety among patients undergoing cardiac surgeries.
2. To assess the post intervention level of stress and anxiety among patient undergoing cardiac surgeries.
3. To assess the effectiveness of progressive muscle relaxation therapy on reducing the stress and anxiety among patient undergoing cardiac surgeries.
4. To associate the pre intervention and post intervention level of stress and anxiety among patient undergoing cardiac surgeries with selected demographic variables.

OPERATIONAL DEFINITIONS

Effectiveness: Refers to the positive outcome of the progressive muscle relaxation therapy among the patient undergoing cardiac surgeries.

Progressivemuscle relaxation therapy: Refers to a technique that involves tenses and relaxes various muscles in the body in a systematic manner.

Stress: Refers to a state of mental, emotional stain or tension of a person resulting from adverse or demanding circumstances.

Anxiety: Refers to a state of uneasiness and apprehension that is caused by too much tension.

Cardiac surgeries: Refers to the person with heart problems undergoing surgical procedure for treatment.

HYPOTHESIS

There is a significant relationship between the progressive muscle relaxation therapy and reduction of stress and anxiety among patients undergoing cardiac surgeries.

DELIMITATIONS

- The sample size was delimited to 30.
- The study was delimited to patient undergoing cardiac surgeries.
- The study was delimited to 4 weeks.

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

The review of literature is an essential aspect of the scientific research. It is a systematic identification, location, scrutiny and summary of written material. That contains information related to the problem under study. The investigator gained insight in selected problem from an extensive review.

This chapter is designed to include the review of literature and the conceptual frame work adopted for the study.

PART I - REVIEW OF RELATED LITERATURE

The stress and anxiety can be caused by a physical or emotional change. The progressive muscle relaxation (PMR) is a stress, anxiety reduction technique. It was first introduced by American physician Edmund Jacobson in the year 1930. Progressive muscle relaxation is a systematic technique for achieving a deep state of relaxation. It involves altering Tensing and releasing various muscle groups throughout the body produces a deep state of relaxation. Relaxation techniques are also used to induce sleep, reduce pain, and calm emotions. The main result of the progressive muscle relaxation therapy is a greater sense of physical and emotional well-being.

This chapter is organized systematically and classified in the following manner.

- Literature related to progressive muscle relaxation.
- Literature related to progressive muscle relaxation for reduction of anxiety
- Literature related to progressive muscle relaxation for reduction of stress.
- Literature related to progressive muscle relaxation on cardiac surgery.

PART II - CONCEPTUAL FRAMEWORK

PART I

REVIEW OF RELATED LITERATURE

“Health is wealth” this proverb means to live as healthy as possible in the natural wish of every person for oneself and for his or her family. In this regard stress plays its own role as stress normally is a healthy one that motivates, moves the person for usual daily routine.Positive stress gives energy to work and on the other hand negative stress can perpetuate a down word and lead to more serious and complicated situations.

Stress that continues without relief can lead to a negative stress reaction. Distress can disturb the body's internal balance or equilibrium. It leading to physical symptoms such as headache, elevated blood pressure, chest pain, sexual dysfunction, and problems of sleeping and emotional problems can also result from distress. Research shows that stress also can bring on or worsen certain symptoms or diseases. Stress is linked to the leading causes of death, heart disease, cancer, lung ailments, accidents and cirrhosis of the liver.

Anxiety and stress significantly increase a person's risk of developing heart disease.The stress can accelerate heart disease and can lead to a heart attack.A stressful situation sets off a chain of events. The body releases adrenaline, a hormone that affects the breathing and heart rate to speed up and the blood pressure to be rise. Preoperative anxiety and stress are common in patients waiting for surgical procedures. Preoperative anxiety is described as an unpleasant state of uneasiness or tension that is secondary to a patient being concerned about a disease, hospitalization, anesthesia and surgery.

Progressive muscle relaxation is a simple and effective way to help patients learn how to relax. Relaxation is a state of relative freedom from both anxiety and skeletal muscle tension.Relaxation techniques often combine breathing and focused attention to calm the mind and relax the body. The body is relaxed, breathing slows, blood pressure and oxygen consumption decreases. Relaxation techniques are also used to induce sleep, reduce pain, and calm emotion.

Literature related to progressive muscle relaxation

Pathak. P., et al., (2013) conducteda experimental study on the effect of progressive muscle relaxation therapy for reducing pain and fatigue among hospitalized cancer patients receiving radiotherapy. There were 100 patients were selected for this study and divided into two groups, as intervention group and control group. The control group received usual care and the experimental group participated progressive muscle relaxation sessions conducted with an audiotape daily for about 15 to 20 minutes in 4 weeks duration. The outcome was measured with a numerical rating scale and fatigue was measured with the cancer fatigue Scale. The result showed that after the 4 weeks intervention, both pain and fatigue scores were significantly reduced in the intervention group. No significant change in control group. Thus the study concluded that the progressive muscle relaxation therapy for reducing pain and fatigue among hospitalized cancer patients receiving radiotherapy.

Mehtap. T., et al., (2012) conducted a study on the effect of progressive muscle relaxation training on Fatigue and sleep quality in patients with multiple sclerosis. There were 32 patients with multiple sclerosis selected for this study and divided in two groups, as experimental group and the control group. The experimental group received the progressive muscle relaxation therapy as once a day for 6 weeks and the control group received the usual care. The outcome was measured through the Fatigue Severity Scale and Pittsburgh Sleep Quality. The result shows that progressive muscle relaxation decreased patient's fatigue level and improved their sleep quality.

Neethu. D., et al., (2012) done a study to assess effectiveness of progressive muscle relaxation therapy on quality of sleep among patients admitted for cardiac surgery at a selected Hospital in Mangalore. Totally 60 patients admitted for cardiac surgery were selected and divided into two groups. The experimental group received the intervention of progressive muscle relaxation therapy for 30 minutes daily for a period of 5 days and control group received routine care. The outcome was measured by comparing pre test and post test using Modified Pittsburgh Sleep

Quality Index and 3 point rating scale on assessing factors affecting quality of sleep.The study result showed significant improvement in the quality of sleep in the experimental group after progressive muscle relaxation therapy by reducing the fear, stress and anxiety.

Navaneethan. B., et al., (2009) conducted a study on the effects of progressive muscle relaxation training on anxiety of male inter-collegiate volleyball players. There were 24 male volleyball players from PSG College of Arts and Science, at Coimbatore selected for the study. The player's age ranged from 18 to 25 years and they were randomly divided into two groups as study group and control group. The experimental groups were received progressive muscle relaxation training for 3 days in a week and for 6 weeks in total and the usual care for control group. The outcome was measured through the Competitive State Anxiety Inventory-2 scale. The result of the study revealed that there was significant difference in the levels of competitive anxiety among the male inter-collegiate volleyball players.

Abbas. H., et al., (2008)conducted a experimentalstudy on the effect of progressive muscle relaxation on dyspnea of asthmatic patients. A totally 26 patients were selected for this study and randomly divided into two groups, as study group and control group. The study group was trained by progressive muscle relaxation training and it was continued for four weeks as twice in a day and control group received only usual care. The outcome was measured by visual analogue scale in both groups. The result showed that dyspnea in study group was significantly decreased in comparison with control group.

Yu Ds., et al., (2007) done a study to identify the effect of progressive muscle relaxation training on improvement in the outcomes among cardiac patients. Totally 56 patients were selected for the study. The intervention was given mainly two methods like conducting workshop twice daily and progressive muscle relaxation home practice. The main outcome measure as psychological distress, dyspnea, and fatigue and the post test was conducted in the 8^{th} week. The result

shows that the progressive muscle relation therapy had medium effect on psychological distress and the greater improvement in the cardiac symptoms status.

Molassiotis. A., et al., (2006) done astudy on the effect of progressive muscle relaxation training in the management of post-chemotherapy nausea and vomiting. Totally 88 patients were selected for this study and divided into two groups, as experimental group and the control group. The control group received oralanti-emetics and intravenous anti-emetics half an hour before the chemotherapy administration as per the hospital protocol and the experimental group received the progressive muscle relaxation therapy once a day for 5 days. The outcome was assessed with the Morrow Nausea and Vomiting Scale. The result showed that the duration and intensity of nausea and vomiting were lower in the experimental group and the progressive muscle relaxation therapy is an effective adjuvant method to decrease nausea and vomiting in chemotherapy patients.

Good. M., et al., (2005) conducted a comparative study to assess the effect of relaxation therapy and music therapy on the postoperative pain. There were 84 abdominal surgical patients are randomly assigned into four groups mainly, as relaxation group, music therapy group, a combination of relaxation and music group and control group. The Interventions were taught preoperatively during the first ambulation and the control group received the usual care. The outcome was measured and compared between the four groups by using the pain scale. The result showed that the progressive muscle relaxation therapy and music therapy was effective during the first ambulation period for the experimental group than the control group. Thus the study concluded that the interventions for postoperative days will help to reduce the postoperative pain 89% of experimental group reported the reduction of pain.

Anderson G. C., et al., (2002) conducted a study on the effect of progressive muscle relaxation therapy techniques on reducing the pain following gynaecologic surgeries. A total of 311 patients from five Midwestern hospitals were selected for this study and randomly assigned to both the intervention group and the control group. The outcomes were assessed during ambulation and rest on first and

second postoperative days. The Pain sensation and distress were measured using visual analogue scales. Thus the result showed that the intervention group had significantly less pain during post test than the control group on both days.

Seers. K., et al., (1998) had conducted a study on the effects of progressive muscle relaxation training in management of chronic pain. There were 414 patients selected for this study mainly with the rheumatoid arthritis, ulcerative colitis and cancer pain. The patients are divided into two groups, as experimental group and the control group. The experimental group received progressive muscle relaxation therapy and control group received usual care. The outcome was based on the comparison between the pre and post treatment assessments using the McGill Pain Questionnaire. The result showed that the scores were significantly lower for patients receiving relaxation compared with the routine treatment control group. The study concluded that the progressive muscle relaxation therapy is effective in reducing the chronic pain

Mandle. C. L., et al., (1990) had conducted a study on the effect of relaxation therapy with patients, who had undergone femoral angiography. A totally 45 patients were selected for this study. The relaxation instruction was given through audiotape and all patients were instructed to listen to the audiotape during the entire angiographic procedure. Each audiotape was played through earphones. The result showed that patients given through audiotape with instructions to elicit the relaxation response experienced significantly less anxiety and pain and requested significantly less fentanyl citrate and diazepam. Thus the study concluded that the relaxation therapy is a simple, inexpensive, efficacious, and practical method to reduce pain, anxiety, and medication during femoral angiography and may be also useful in other invasive procedures.

Literature related to progressive muscle relaxation for reduction on anxiety.

Richardson. A., et al., (2012) done a study on the effect of relaxation techniques on anxiety among the lung cancer patients receiving palliative radiotherapy. There were 70 patients participated in this study. They were divided into experimental and control group. The experimental group received the progressive muscle relaxation therapy for 3 weeks duration and the control group received the normal routine care to the patient. The outcomes were measured through the questionnaire and the check list between experimental and the control group .The result showed that experimental group had decrease anxiety and discomfort. Thus the study concluded that the progressive muscle relaxation is useful for the reducing the anxiety to lung cancer patients receiving palliative radiotherapy.

Soumendra. S., et al., (2012) done a comparative study for the effect of progressive muscle relaxation and internal imagery on reducing the anxiety among Taekwondo athletes. Totally 88 Taekwondo players were randomly assigned into two groups such as the experimental and control group. The experimental group received the sessions consisted of 2 times per week. The effect has been measured after the8thsession of intervention. The result revealed that there was a significant difference in somatic anxiety among athletes. In somatic, cognitive anxiety and self confidence significant increase was found between experimental groups than the control group. Thus the study concluded that these is two techniques have effects on reduce somatic and cognitive anxiety and also increase the self confidence in Taekwondo players.

Zhao. L., et al., (2012) done a study on the effects of progressive muscular relaxation training on anxiety, depression and quality of life of endometriosis patients under gonadotrophin-releasing hormone agonist therapy. A totally 100 consecutive Han Chinese endometriosis patients were selected for this study and they were grouped into two groups as experimental and the control group. The experimental group received the progressive muscle relaxation therapy for 2 days per week and the additional sessions using a pre-recorded tape for 25 min/week

during weeks 2 to 8 and the control group receives the usual care. The outcome has been measured through the Anxiety and Depression Scale. The result showed that the progressive muscle relaxation group had significantly better improvement in the scores of anxiety, depression and overall domain of quality of care than the control group. Thus the study concluded that progressive muscle relaxation training is effective in improving anxiety, depression.

Scogin. F., et al., (2010) had conducted a experimental study on the effect of progressive muscle relaxation training and imaginal relaxation training for reducing the anxiety among elderly patients. Totally 90 patients were selected for the study. Elderly patient received either progressive muscle or imaginal relaxation training for 4 sessions of the training courses. The outcomes were measured through Physical Assessment Scale and Symptom Checklist. The result showed that Physical Assessment Scale of the relaxation Inventory indicated that relaxation responses were acquired with in the 4 sessions of class. The Symptom check-list 90 measured Self reported personal adjustment, which showed significant positive changes following relaxation training. Thus the study concluded that progressive muscle relaxation reducing the anxiety for the elderly Patients.

Chen. W. C., et al.,(2009) done aexperimental randomized controlled study to assess the efficiency of progressive muscle relaxation training on anxiety among patients with acute schizophrenia . The study participants were 18 patients with acute psychiatric inpatient in jaiwan and patients. They were assigned as an experimental and control group. The intervention was given to the experimental group in the duration of 30 days. The outcome was measured through observation and checklist. The result showed that the degree of improvement which was significantly higher in the experimental group than in the control group. Thus the study concluded that progressive muscle relaxation training can effectively alleviate anxiety in patient with schizophrenia.

Dehdari. T., et al., (2009) hadconducted a study regarding the effect of progressive muscle relaxation training in decreasing anxiety and improving the quality of life among patients after coronary artery bypass graft. About 110 patients

in the cardiac rehabilitation clinic of Tehran heart centre were selected for this study. The coronary artery bypass graft surgery patients were received both exercise training and life style education in the duration of 6 weeks and the control group received usual care was 8 week. After completion of intervention the anxiety and quality of life were assessed through questionnaires between the two treatment groups. The result showed that there were significant difference in overall quality of life and the state trait anxiety score was reduced after the intervention of the experimental group. Thus the study concluded that the progressive muscle relaxation training is effective therapy for improving psychological health and quality of life in anxious heart patients.

Pender. N. J., et al., (2009) conducted a study on the effect of progressive muscle relaxation training on anxiety and health locus of control among hypertensive adults. There are 44 hypertensive clients were selected for this study and they have been divided into two groups as experimental and the control group. The experimental group received relaxation training in a series of weekly group session followed by individual monitoring sessions over a 6 weeks period. The control group received blood pressure monitoring, weight checks, and health counselling and no relaxation training during the study period. The study result showed that group instructed in relaxation exhibited significantly lower level of anxiety than the control group and the relaxation group also scored significantly higher than the control group. Thus the study concluded that relaxation training was usefulness of modifying affective and cognitive characteristics of hypertensive clients.

Ranfroe. K. L., et al., (2009) had conducted a experimental study on the effect of progressive muscle relaxation on dyspnea and Anxiety in patients among chronic obstructive pulmonary disease. There were 20 outpatients with chronic obstructive pulmonary disease selected for the study. The Patients have been divided into a treatment group consist of 12 and a control group consist of 8 patients. The treatment group underwent four sessions weekly on progressive relaxations training and daily home practice with taped instruction. The measurements were made before and after treatment by using Spicberger's State Anxiety Inventory Scale and Visual

Analogue Scale for dyspnea, Heart rate, respiratory rate, and forced vital capacity were also measured. The result showed that progressive relaxation training was shown the more effective than the control group in reducing dyspnea and Anxiety during each session.

Javanmard. **G. H.,et al., (2008)** conducted a study to determine the effectiveness of progressive muscle relaxation exercises on anxiety among mothers who have mentally retarded children. There were 64 mothers selected for this study and they had been divided into two groups. The first group consist of 32 mentally healthy children mothers and the control groups consist of 32 mentally disordered children mothers. Relaxation exercises were administered to the experimental group for two months. The Beck Anxiety Inventory Scale was used to measure the anxiety. The study results indicated that the experimental group showed marked reduction on anxiety.

Deepika. K., et al., (2008) conducted a study on the effects of progressive muscle relaxation training on anxiety of maintenance hemodialysis patients. Totally 59 patient who was dialyzed at the dialysis unit at a centre in northern India were selected for this study. The patients were randomly assigned into experimental group and control group. The experimental group were trained in progressive muscle relaxation for a session and were advised to practice for 2 weeks, with the help of audio CD and printed instruction booklet. Control group received the standard routine care. The outcome has been measured through the Hamilton Anxiety Rating Scale. The result showed that 98% of patients had major anxiety. Significant decrease anxiety was found the experimental group than the control group after one week and after 2 weeks. Thus the study concluded that the progressive muscle relaxation therapy is effective in reducing anxiety of hemodialysis patients.

Lolak. s., et al., (2008) had conducted a prospective randomized controlled trial study on the effect of progressive muscle relaxation training on anxiety and depression among patients with chronic breathing disorder receiving pulmonary rehabilitation. There were 83 patients with chronic breathing disorders selected for the study. The progressive muscle relaxation therapy was given to interventiongroup

and usual care to the standard group. Outcome was measured through the stress and depression scale. The result showed that the stress and depression score lower for the intervention group. Thus the study concluded that progressive muscle relaxation was effective in reducing anxiety and depression level on chronic lung patient.

Singh. V. P., et al., (2007) had conducted a study on the Comparison of effectiveness of music and progressive muscle relaxation on patients with anxiety who had been diagnosed as chronic obstructive pulmonary disorder. Totally 72 chronic pulmonary disease patients from K.M.C hospitals were selected for this study. Music group administered to one group which was self selected music of 60 to 80 beats per minute for 30 minutes. Progressive muscle relaxation group practiced relaxation through a pre recorded audio of instructions of 16 muscle groups. Outcome was measured through Spielberger's state anxiety inventory, systolic blood pressure, diastolic blood pressure, pulse rate and respiratory rate. The result showed that there was statistically significant interaction effect between the two groups for state anxiety. Music and progressive muscle relaxation are effective in reducing anxiety and dyspnea along with physiologic measures such as systolic blood pressure, diastolic blood pressure, pulse rate and respiratory rate in two sessions in chronic pulmonary obstructive disease patients hospitalized with exacerbation. Thus study concluded that reductions in the progressive muscle relaxation group were greater compared to the music group.

Yildirium. Y. K., et al., (2006) conducted a study to determine the effect of progressive muscle relaxation training on anxiety and quality of life among dialysis patients. Totally 46 patients who were treated with dialysis in the dialysis centre of Ego university medical faculty hospital selected for this study. Dates were collected in the form of questionnaire. The results of the study were assessed through the questionnaires before and after giving the intervention. The result showed that the mean post anxiety score was lower than the pre anxiety score and the quality of life is improved in the post test. Thus the study concluded that progressive muscle relaxation therapy helps the dialysis patients to decrease the state trait anxiety levels and positive impact on quality of life.

Cheung. Y. L., et al., (2003) had conducted a study to identify the effect of progressive muscle relaxation training on anxiety and quality of life after stoma surgery in colorectal cancer patients. There were 59 patients participated in the study. The patients divided into two groups, as control and experimental groups. The control group received routine care and the experimental group received the progressive muscle relaxation therapy through teaching session and practice at home for the first 5 weeks. The state–trait anxiety inventory and two quality of life scales were used to collect the data. The result showed that experimental group has decreased anxiety and improved quality of life. Thus the study concluded that the progressive muscle relaxation therapy improved the psychological health and quality of life for the colorectal cancer patient.

Collins. J. A., et al., (1997) done a study on the effect of progressive muscle relaxation on psychological and physiologic outcomes in adults with cardiovascular disease who were participating in a phase II cardiac rehabilitation program. Totally 50 patients were participated for this study and divided into two groups as experimental and control group. The experimental group participated in progressive muscle relaxation training as doing daily home practice with audiotape instructions over 6 weeks period. The outcome was measured through the psychological outcomes measures included state and trait anxiety score and checklist-90. The physiological outcomes included measuring the resting heart rate and blood pressure. The study result showed that the experimental group shows lower subjective tension mainly in reduced state and trait anxiety level and lower mean resting heart rate, blood pressure than the control group. Thus the study concluded that the relaxation techniques will reduce anxiety level and the resting blood pressure, heart rate for the phase II cardiac rehabilitation patients.

Literature related to progressive muscle relaxation for reduction on stress

Archana. K., et al., (2011) conducted a study on the compare on the efficacy of two relaxation techniques like progressive muscle relaxation therapy and skin resistance biofeedback among the stressed females. There were 30 highly stressed female selected and randomly assigned into three groups. The first group

participated in progressive muscle relaxation program, the second group participated in skin resistance biofeedback program and the third group consider as a control group. The outcome were determined by using the Comprehensive Anxiety Test Questionnaire and pulse rate on before and after the intervention and the training was given for 20 min for 10 days. The result showed that progressive muscle relaxation training was found to be more effective than biofeedback training in reducing the pulse rate and anxiety scores. Thus the study concluded that all progressive muscle relaxation was found to be more effective than biofeedback training in reducing the pulse rate and anxiety scores.

Iso M. R., et al., (2008) done a quasi experimental study for the effect of progressive muscle relaxation training on the level of depression, anxiety, and stress among prostate cancer patients. Totally 77 patients from the University Malaga medical centre and 78 patients from the university KebangsaanMalagsia medical centre were selected for the study. The prostate cancer from UMMC received the intervention and patient from UKMMU were taken as the control group. The level of depression, anxiety and stress were measured by using the depression anxiety stress scale. The result showed that significance improvement in depression stress and anxiety for the intervention group than the control group.

Sheu. S., et al., (2008) conducted a experimental study on the effect of progressive muscle relaxation training in decreasing stress and enhancing their perception of health. There were 40 patients from a hypertensive outpatient clinical selected for this study. The 20 patient received progressive muscle relaxation training once a week and practice at home daily for 4 weeks the control group patients received normal care. The outcomes are measured through the observation and checklist. The result showed that the progressive muscle relaxation therapy had an immediate effect for reducing the pulse rate, systolic blood pressure rate and diastolic blood pressure. Thus the study concluded that the progressive muscle relaxation training significantly lowered patients perception of stress and beneficial for improve the quality of life of the patient.

Hui. P. N., et al., (2006) had conducted a comparative study on evaluate and compare the two different behavioral rehabilitation programs like Qigong versus progressive muscle relaxation for improving the stress and improve the quality of life among the cardiac patients at Hong Kong. Totally 65 patient were selected for the study with the age group of 65 the cardiac disease. The cardiac disease condition includes myocardial infarction, valve replacement, postcoronary intervention and also ischemia heart disease. The patients were divided into two groups. The first group of patients received instruction and practiced on progressive muscle relaxation and the second group of patients underwent training Qigong. Total 8 sections were conducted and each session lasted for 20 minutes. The outcome of the study based on the psychological and quality of life assessment questionnaires. The result showed that progressive muscle relaxation was more effective in reducing blood pressure compare to Qigong. Thus the study concluded that progressive muscle relaxation therapy improve the quality of life and reduce the stress than the qigong therapy for cardiac patients.

Kashani. F., el al., (2000) had conducted a study to assess the effects of progressive muscle relaxation techniqueson reducing depression, anxiety and stress in women who underwent mastectomy for breast cancer**.** There were 48 breast cancer patients selected by using simple random sampling and they were randomly assigned into two groups such as control and experimental group. The experimental group was treated by combined medical-relaxation therapy and the control group was treated with usual medical therapy. The outcome has been measured through the Depression, Anxiety and Stress Scale (DASS) and a demographic questionnaire. The study result showed that the experimental group improved significantly after the treatment and reduced the depression and anxiety. There was not such improvement in the control group. Thus the study concluded that the relaxation therapy can be effective in reducing the depression, anxiety and stress.

Literature related to progressive muscle relaxation on cardiac surgery

Bruckner. T., et al., (2013) done a experimental randomized controlled study to identify the effect of preoperative patient education and relaxation therapy on pain, anxiety and depression, quality of life on major surgery. A total of 300 patients posted for cardiac and renal surgery were selected for this study. The patients were divided in two groups such as experimental and control group. The experimental group received different coping strategies such as autogenic training, progressive muscle relaxation and the health education classes through the verbal instructions and the power point presentation. The control group receives the general information regarding surgery. The outcome was based on questionnaire for measure the stress, anxiety and the quality of life. The result showed that pre operative stress, anxiety depression is reduced and quality of life is improved. Thus study concluded that pre operative stress, anxiety and depression is reduced it will help to reduce the post operative pain and complications.

Rosenfeldt. F., et al., (2012) conducted a study on the effect of progressive muscle relaxation therapy for physical conditioning, stress reduction and the secondary aim is to evaluate the effect of on quality of life in patient waiting for the artery bypass graft and/or valve surgery at a public hospital in Melbourne, Australia. There were 117 patients were selected for the surgery and divided into two groups the 60 patients received relaxation training and 57 patients received usual care. The experimental group received the relaxation therapy in the hospital along with ongoing therapy beyond the two week duration. The result showed that preoperative relaxation therapy is sufficient to benefits for stress reduction, quality of life. Thus the study concluded that that progressive muscle relaxation therapy is effective for stress reduction, quality of life in patient waiting for the artery bypass graft and valve surgery.

Brompton. R., et al., (2012) conducted a experimental study on the effect of the pre-operative relaxation training on the postoperative recovery of coronary artery surgery patients. There are 356 patients are selected for the study and 188 patients in the experimental group and 168 patients in the control group.

Patients in the experimental group received the intervention from the admission for the surgery and control group had the usual care. The outcome was measure through the SF-36 Health Status questionnaire, the Hospital Anxiety and Depression scale, the General Well-Being questionnaire and a pain measurement tool. The effect has been measure the 3rd day, 3week and 3 months sessions of intervention. The result showed that significant differences between the two groups in the primary outcomes namely anxiety and depression reduce and it will help to psychological wellbeing and increase confidence. The study concluded that progressive muscle relaxation therapy benefit to decrease the stress and anxiety and also improve the quality of life.

Shenefelt. P. D., et al., (2010) conducted a study to identify the effect of relaxation strategies on reducing the stress and anxiety among preoperative surgeries patients. There were 45 preoperative patients were selected for this study. The different relaxation strategies such as progressive relaxation muscle relaxation therapy, guided imagery, biofeedback and meditation given to the patients. The outcome of the study was measured through questionnaire and also the physiological measures such as checking the blood pressure of the patient. The result showed that the relaxation techniques will help the patients to maintain hemodynamic stability such as maintain the blood pressure, reduce the stress and anxiety, decrease discomfort and improve the patient attitude for surgeries. Thus the study concluded that relaxation strategy is useful for maintaining the hemodynamic stability to improve the positive attitude towards the surgeries.

Sendelbach. S. E., et al., (2006) conducted a experimental study on assess the effects of relaxation therapy on physiological and psychological outcomes among patients undergoing cardiac surgery. A total 86 ischemic and valvular heart disease patients were selected into two groups. In that 50 patients received 20 minutes of relaxation therapy. The outcome was measured the effects of relaxation therapy versus a quiet uninterrupted rest period. The physiological measures such as pain intensity, anxiety, stress and also the physiological parameters were observed in systolic blood pressure, diastolic blood pressure, and heart rate. The result showed that significant reduction in stress, anxiety and pain was demonstrated in the group

that received relaxation therapy. Thus the study concluded that the patients admitted for cardiac surgery had benefited the relaxation therapy for reducing the stress, anxiety, pain, blood pressure and heart rate.

Smriti. A., et al., (2000) conducted a experimental study to assess the effectiveness of relaxation therapy on the pre operative anxiety, depression and pain perception of patients undergoing cardiac surgery in a selected hospital of New Delhi. Totally 64 were selected for this study and they divided into two groups such as experimental and control group. The experimental group receives the progressive muscle relaxation training on the preoperative duration and the controlled group received the usual care. The outcome was determine the level of pain, anxiety and stress perception measured by a numerical rating scale and depression anxiety scale before and after the relaxation therapy and to compare the physiological parameters, mainly blood pressure and pulse rate before and after the relaxation therapy. The result showed that the post test scores were significantly less in the patients who underwent relaxation therapy. Thus study concluded that the experimental group felt relaxed and found that relaxation therapy as an effective measure in reducing their pain level, anxiety and depression for the cardiac surgeries patient.

All the above literature shows that, progressive muscle relaxation therapy was effective in reduction of fatigue, sleep disturbance, nausea, stress, anxiety, pain and hypertension in selected medical condition like chronic obstructive pulmonary disease, multiple sclerosis, arthritis, irritable bowel syndrome, surgery patients, asthma and blood pressure.

PART II

CONCEPTUAL FRAME WORK

Conceptual framework consists of concepts that are placed within a logical and sequential design. It clarifies concepts and purpose relationship among the concepts in a study. Conceptual framework enables the researcher to find links between the existing literature and his own research goals. The conceptual frame work in nursing research can help to provide clear concise idea knowledge about research. It provides the guideline to attain the objectives of the study based on the theory and broad prospective for nursing practice, research and education. Their overall purposes to make scientific and meaningful finding and also to generalize the findings.

The conceptual framework selected for this study was based on modifies made on Roy's adaptation model (1976). Roy's model is characterized as a system theory with a strong analysis of interaction. The Roy's adaptation model focuses on how individuals adapt to constantly changing environmental stimuli. Adaptation is regarded as the process and outcome whereby thinking and feeling persons use conscious awareness and choice to create human and environmental integration.

The investigator applied the Roy's adaptation theory aimed to assess the effectiveness progressive relaxation techniques on reduction of stress and anxiety among patients undergoing cardiac surgeries. In this theory there are three major components are emphasized. It employs a feedback cycle of Input, Throughput and Output.

Input

Input is identified as stimuli which can come from the environment or within a person. Stimuli are classified as:

- Focal stimuli
- Contextual stimuli
- Residual stimuli

Focal internal stimuli

Focal internal stimuli are that immediately confronts the individual in a particular situation. In this study it refers to the patient undergoing cardiac surgeries.

Contextual stimuli

Contextual stimuli are those other stimuli that influence the situation which include demographic variables of patients as age, gender, education, marital status, duration of illness, type of illness, personal habits and family history.

Residual stimuli

It refers to non specific stimuli such as hospital environment.

Throughput

Throughput makes use of a person's processes and effective. processes determine the level of stress and anxiety experienced by patient undergoing cardiac surgeries, effectors determine the pre assessment of the level of stress and anxiety by using modified Cohen's perceived stress scale and Zung -self -rating anxiety scale. Progressive muscle relaxation technique was given to the patients for 30 minutes in5 days duration. It is useful to reduce stress and anxiety.

Output

Output is the outcome of the system. When the system is a person, output refers to the person's behaviours, It refers to reduce in stress and anxiety behaviour by adapting relation techniques. This output or represent given through the feedback for this system. In this study output is measured by the interview schedule on stress and anxiety among the patient undergoing cardiac surgeries by using stress and anxiety scale. So the investigator has selected the Modified Roy's Adaptation Model to in this study.

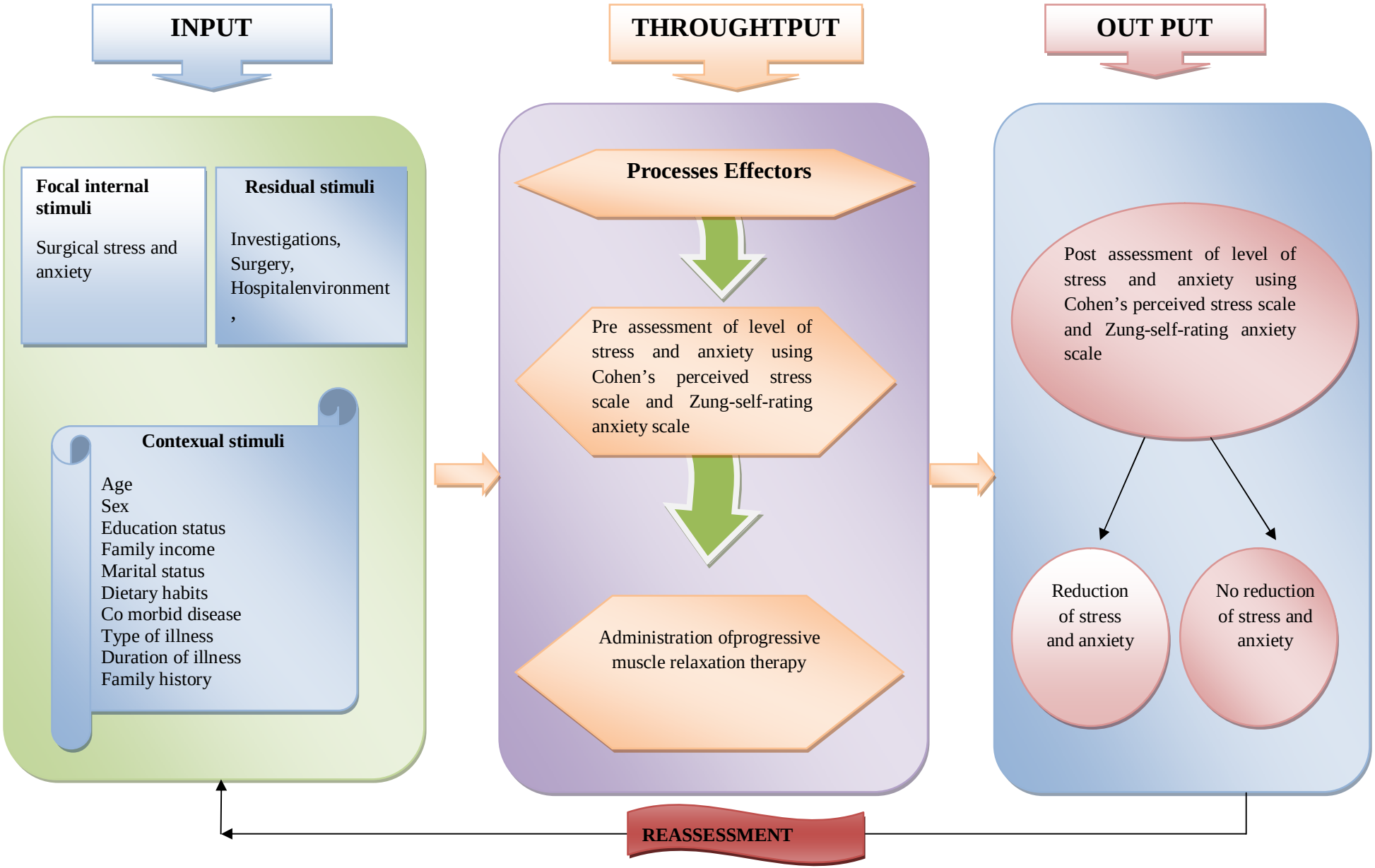

Fig 1: MODIFIED ROY'S ADAPTATION MODEL (1976).

METHODOLOGY

CHAPTER III

METHODOLOGY

The methodology of research indicates the general pattern of organizing the procedure of gathering valid and reliable data for an investigation. It involves the systematic procedure which the research starts from initial identification of the problem to its final condition. This design was usedto assess the effectiveness of progressive muscle relaxation therapy on reduction of stress and anxiety among patient undergoing cardiac surgeries in Dr. Kamakshi Memorial Hospital at Chennai.

This chapter provides brief description of methods adopted for study. It includes research approach, research design, study setting, samples and sampling technique, development and description of tool, pilot study and data collection procedure.

RESEARCH APPROACH

Quantitative research approach was used to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries.

RESEARCH DESIGN

The design selected for the study was pre experimental one group pre test post test design.

RESEARCH VARIABLES

Independent variables: It refers as progressive muscle relaxation techniques for cardiac surgeries patients.

Dependent variables: It refers as the reducing the stress and anxiety for the cardiac surgeries patients.

SETTING OF THE STUDY

This research study was conducted in cardiothoracic unit of Dr. Kamakshi Memorial Hospital at Chennai. This was a 500 bedded Multi specialty hospital. It has four floor and consists of all specialties including Emergency, Critical care, General Medicine, Neurology, Urology, Orthopedics, Pulmonology and separate high tech Cardiothoracic department. This cardiothoracic unit was situated in the third floor it consist of well equipped Cardiac Catheterization lab, Cardiac Operation Theater and Cardiac ICU and also separate bed for cardiac patient in all the wards. Nearly about 25 to 30 cardiac patients attend outpatient department per day. Among them 10 to 13 patients admitted for cardiac surgeries per week.

POPULATION

The target populations for the study consist of patients undergoing cardiac surgeries in Dr. Kamakshi Memorial Hospital.

SAMPLE

The sample consists of patients who diagnosed as cardiac diseases and planned for cardiac surgeries and who fulfills the inclusion criteria.

SAMPLE SIZE

The sample size consists of 30 patients undergoing cardiac surgeries in Dr. Kamakshi Memorial Hospital.

SAMPLING TECHNIQUE

Purposive sampling technique was used to select the samples. The patient undergoing cardiac surgeries in Dr. Kamakshi Memorial Hospital and the patient who met the inclusive criteria will be selected.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

- Patient who are in the age group of above 35 years.
- Patients who had undergoing cardiac surgeries.
- Patients who are willing to participate in this study.
- Both male and female patient undergoing cardiac surgeries.
- Patients who knows to speak Tamil and English.

Exclusion criteria

- Patients who are not willing to participate in this study.
- Age group is less than 35 yrs.

DESCRIPTION OF THE INSTRUMENT

The tool was prepared to assess the effectiveness of progressive muscle relaxation therapy on reducing the stress and anxiety among patients undergoing cardiac surgeries. It was developed after the extensive review of literature, discussion, and expert opinion.

The tools consist of three parts which includes:

Part - I

The demographic variables consist of personal variable such as age, sex, religion, educational status, occupation, marital status, type of family, dietary pattern, personal habit. The clinical variables type of illness, duration of illness, co morbid condition and the family history of cardiac problems.

Part - II

It consists of Modified Cohen's perceived stress scale. This scale was used for measuring the stress. Modified Cohen's perceived stress scale consists of 10 questions for assessing the stress level.

The scoring was interpreted as follows

1- 10 - Almost never

11-20 - Sometimes

21-30 - fairly often

31-40 - very often

It consists of Zung-self-rating anxiety scale. The scale was measuring the level of anxiety. The Zung-self-rating anxiety scale consists of 20 questions for assessing the anxiety level.

The scoring was interpreted as follows

20-44 - Normal Anxiety Level

45-59 - Mild Anxiety Level

60-74 - Moderate Anxiety Level

75-80 - Severe Anxiety Level

Part - III

The Progressive muscle relaxation therapy is a deep relaxation technique which reducing the stress, anxiety and overall body tension among preoperative cardiac patient. Part III consist of explaining procedure to the patient and instructed the patient to do the muscle relaxation techniques in the preoperative period with the duration of 20 minutes. The post test was assessed at the end of 5 th day using the same tool by means of interview method.

VALIDITY

Validity of the tool was assessed using content validity. Content validity was determined by expert from nursing and cardiology field. After the modification they agreed this tool for assessing the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries.

RELIABILITY

Reliability was measured by using test retest method, its correlation coefficient r value values was 0.72 and 0.80. It shows that the tool was reliable and used to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries.

ETHICAL CONSIDERATION

The study was conducted after the approval of dissertation committee. A formal written permission was obtained from the department of cardiothoracic in Dr.kamakshi Memorial Hospital at Chennai. The effect of the stress and anxiety on the cardiac surgeries patients were clearly explained about the study purpose and procedures. The formal written consent was taken from the samples. The usual assurance of anonymity and confidentiality was obtained.

PILOT STUDY

The pilot study was conducted to test the feasibility appropriateness and practicability. The pilot study was conducted among 3 preoperative cardiac surgeries patient in Dr. Kamakshi Memorial Hospital at Chennai, from the duration of 01.04.2013 to 06.04.2013. A formal permission was obtained from the higher authorities and also obtained the written consent from the patients. The participants were selected by purposive sampling method.

A brief introduction was given about the purpose of the study was explained to the patients to get their co operation and written consent was obtained from the

patients. The pretest was conducted using the Cohen's stress scale and Zung-self anxiety Scale for 15 minutes for each patient. The progressive muscle relaxation technique was taught by investigator from 01.04.2013 to 06.04.2013 days duration for every day 20 minutes. Then the investigator has assessed the effectiveness of progressive muscle relaxation therapy by conducted the post test on using the same tool.

The result of the study showed that progressive muscle relaxation therapy was effective to reduce the stress and anxiety among patients undergoing cardiac surgeries. The study was feasible. The tool used in pilot study was used for the main study.

DATA COLLECTION PROCEDURE

The permission was obtained from the director of Dr. Kamakshi Memorial Hospital for the data collection.

The data collection procedure was started from 06.05.2013 to 06.06.2013 in Dr. Kamakshi Memorial Hospital at Chennai. The study was carried out with total 30 patients undergoing cardiac surgeries, who fulfilled the inclusion criteria and patient was select by using purposive sampling method. Every day 2 to 3 patients participated for this study .The investigator introduced herself to the patient and purpose of the research was explained to ensure the better co operation during the data collection procedure, get the consent from the patient.

The patient demographic variables will be assessed on the day of admission prior to the cardiac surgery and the stress and anxiety will be assessed using Modified Cohen's perceived stress scale and Zung-self-rating anxiety scale. The interview schedule was conducted to the patient to assess the pre test level of stress and anxiety and time taken for each patient was 30 minutes. After conducting pretest the investigator was taught the progressive muscle relaxation exercise to the patient with the duration of 30 minutes. The investigator assessed the level of stress and anxiety on the 5^{th} day by using the same tool.

PLAN FOR DATA ANALYSIS

The dates obtained were analyzed using both descriptive and inferential statistics. Frequency percentage will be used for the demographic variables. Mean and standard deviation will be used for analyze the pre intervention and the post intervention. Paired ‘t’ test will be used to assessed the effectiveness of progressive muscle relaxation techniques among the patients undergoing cardiac surgeries. Chi square test was used to associate the pre intervention and post intervention level of stress and anxiety with their demographic variables.

The research methodology included the procedure and technique for conducted the study. The research methodology dealt with initial identification of the problem to its conclusion.

A STUDY TO ASSESS THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON STRESS AND ANXIETY AMONG PATIENT UNDERGOING CARDIAC SURGERIES

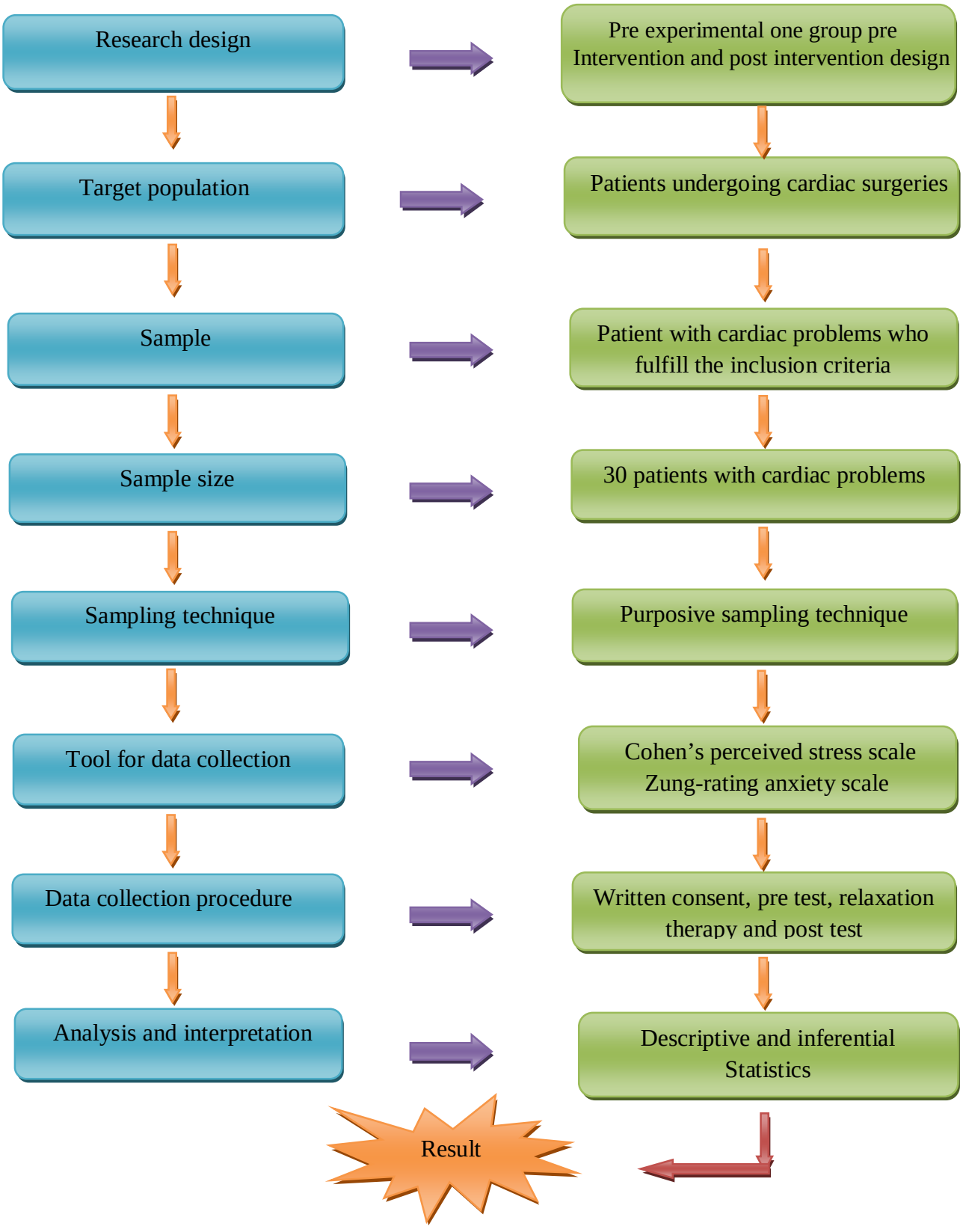

Fig 2 : Schematic representation of research methodology.

DATA ANALYSIS AND INTERPRETATION

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the description of the study subjects, classification, analysis and interpretation of data collected to evaluate the effectiveness of progressive muscle relaxation reducing stress and anxiety among patient undergoing cardiac surgeries.

Section A: Frequency and percentage distribution of demographic variables of patients undergoing cardiac surgeries.

Section B: Frequency and percentage distribution of pre intervention and post intervention level of stress among patients undergoing cardiac surgeries.

Section C: Frequency and percentage distribution of pre intervention and post intervention level of anxiety among patients undergoing cardiac surgeries.

Section D: Comparison of pre intervention and post intervention level of stress among patients undergoing cardiac surgeries.

Section E: Comparison of pre intervention and post intervention level of anxiety among patients undergoing cardiac surgeries.

Section F: Comparison of mean and standard deviation of pre intervention and post intervention level of stress and anxiety among patients undergoing cardiac surgeries.

Section G: Association of pre and post intervention level of stress and anxiety among patients undergoing cardiac surgeries with their demographic variables.

SECTION - A

Table 1: Frequency and percentage distribution of demographic variables of the patients undergoing cardiac surgeries

N=30

S.No	Personal Variables	Frequency	Percentage
1	**Age in years**		
	35 -45 yrs	3	10. 0
	46 -55 yrs	11	36.7
	56 -65 yrs	9	30.0
	> 65 yrs	7	23.3
2	**Sex**		
	Male	21	70.0
	female	9	30.0
3	**Education**		
	Illiterate	6	20.0
	Primary	7	23.3
	Secondary	7	23.3
	Higher secondary	6	20.0
	Graduate	4	13.3
4	**Occupation**		
	Unemployee	8	26.7
	Private employee	13	43.3
	Government employee	3	10.0
	Retired person	6	20.0
5	**Family income**		
	<Rs. 5000 Rs.	8	26.7
	5000 – 10000	12	40.0
	Rs. 10000 – 20000	8	26.7
	>Rs. 20000	2	6.7
6	**Marital status**		
	Married	20	66.7
	Single	6	20.0
	Widow/widower	4	13.3
7	**Type of family**		
	Nuclear family	15	50.0
	Joint family	15	50.0
8	**Personal habits**		
	Tobacco chewing	2	6.7
	Smoking	7	23.3
	Alcoholism	11	36.7
	None	10	33.3
9	**Dietary pattern**		
	Vegetarian	11	36.7
	Non-vegetarian	19	63.3
10	**Types of illness**		
	Coronary artery disease	17	56.7
	Valvular heart disease	10	33.3
	Cyanotic and acynotic heart disease	3	10.0
11	**Duration of illness**		
	<3 months	14	46.7
	3-6 months	12	40.0
	6 months- 1 year	4	13.3
12	**Co morbid condition**		
	Hypertension	12	40.0
	Diabetes mellitus	6	20.0
	Any other disease	4	13.3
	none	8	26.7
13	**Family history of cardiac disease**		
	Yes	12	40.0
	No	18	60.0

Table 1 shows the frequency and percentage distribution of demographic variables among the patients undergoing cardiac surgeries. In regard to the age of the patients undergoing cardiac surgeries, the majority of the patients 11 (36.7%) were in the age group of 46-55 years, 3 (10.0%) patients were in the age group of35-45 years, 9 (30.0%) patients were in the age group of 56-65 years, 7 (23.3%)patients were in the group of above 65years. In accordance with sex 21 (70.0%) patients were male and 9 (30.0%) patients were females.

With regard to educational status of the patient undergoing cardiac surgeries 7 (23.3%) patients have completed primary education, 7 (23.3%) patients have completed secondary education,6 (20.0%) patients were illiterate patients, 3 (10.0%) patients have completed higher secondary and 4 (13.3%) patients were graduated patients. In regard to occupation of the patients undergoing cardiac surgeries 8 (26.7%) were unemployed, employed, 3 (10.0%) were government employed and6 (20.0%) were retired employed patients.

Related to family income of the patients 8 (26.7%) were getting the salary of Rs below 5000, 12 (40.0%) patients were getting the salary of Rs 5000-10000,8 (26.7%) patients were getting the salary of Rs 10000-20000, 2 (6.7%) patients were getting the salary of above 20000. Regarding type of family undergoing cardiac surgeries 15 (50.0%) patients were living in nuclear family and 15 (50.0%) were living in joint family. Related to personal habit of the patients undergoing cardiac surgeries 2 (6.7%) patients were using tobacco regularly, 7 (23.3%) patients were smokers,11 (36.7%) patients were drinking alcohol and 10 (33.3%) were having no habits. Considering the dietary habit of the patient undergoing cardiac surgeries11 (36.7%) were vegetarians and 19 (63.3%) patients were non vegetarians.

With respect the type of the cardiac illness 17 (56.7%) patients have coronary artery disease, 10 (33.3%) patients have valvular heart disease and 3 (10.0%) patients have cyanotic and acynotic heart disease. considering the duration of cardiac illness 14 (46.7%) patients have below 3 month of duration of cardiac illness, 12 (20.0%) patients have 3-6 months duration of cardiac illness and 4 (13.3%) patients have 6 months to 1 year duration of cardiac illness. Considering the co morbid condition of the cardiac patients 12 (40.05%) have hypertension, 6 (20.0%) patients have diabetes mellitus, 4 (13.3%) patients have other diseases and 8 (26.7%) patients have no other co morbid conditions. Regarding the family history of cardiac problem 12 (40.0%) patients have history of cardiac problems and 18 (60.0%) patients have no history of cardiac problem.

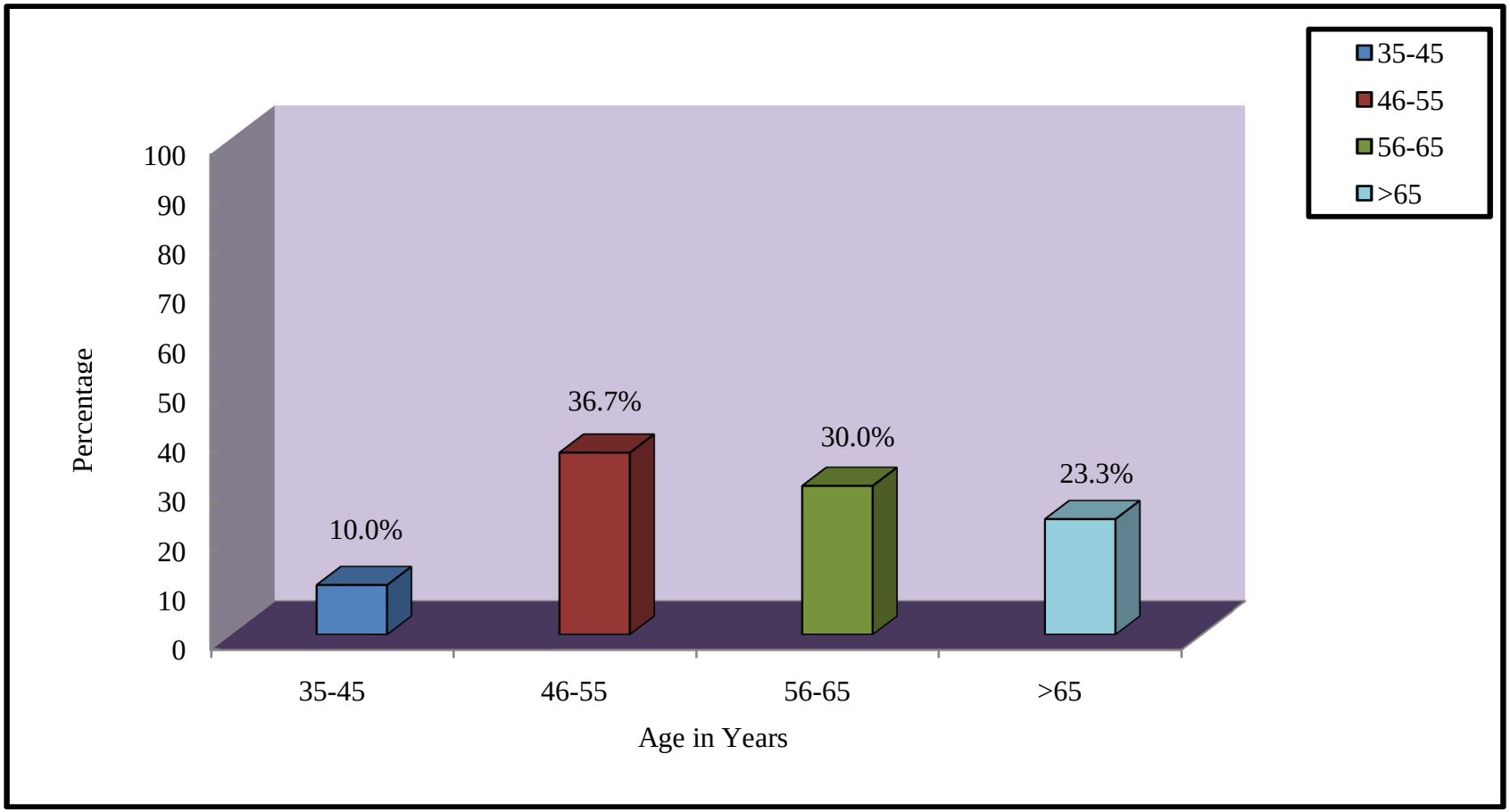

Fig. 3: Percentage distribution of age among patients undergoing cardiac surgeries.

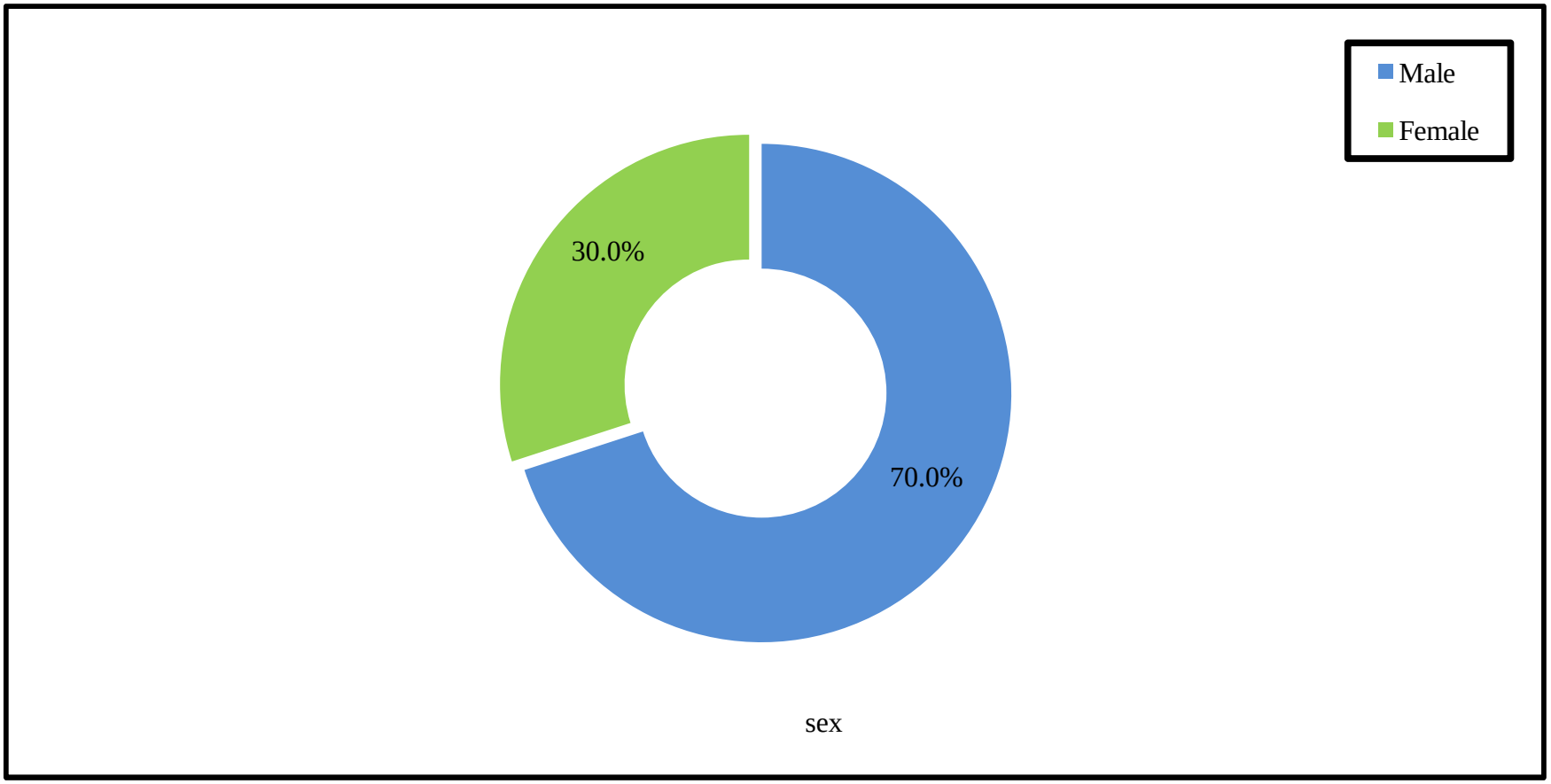

Fig. 4: Percentage distribution of sex among patients undergoing cardiac surgeries.

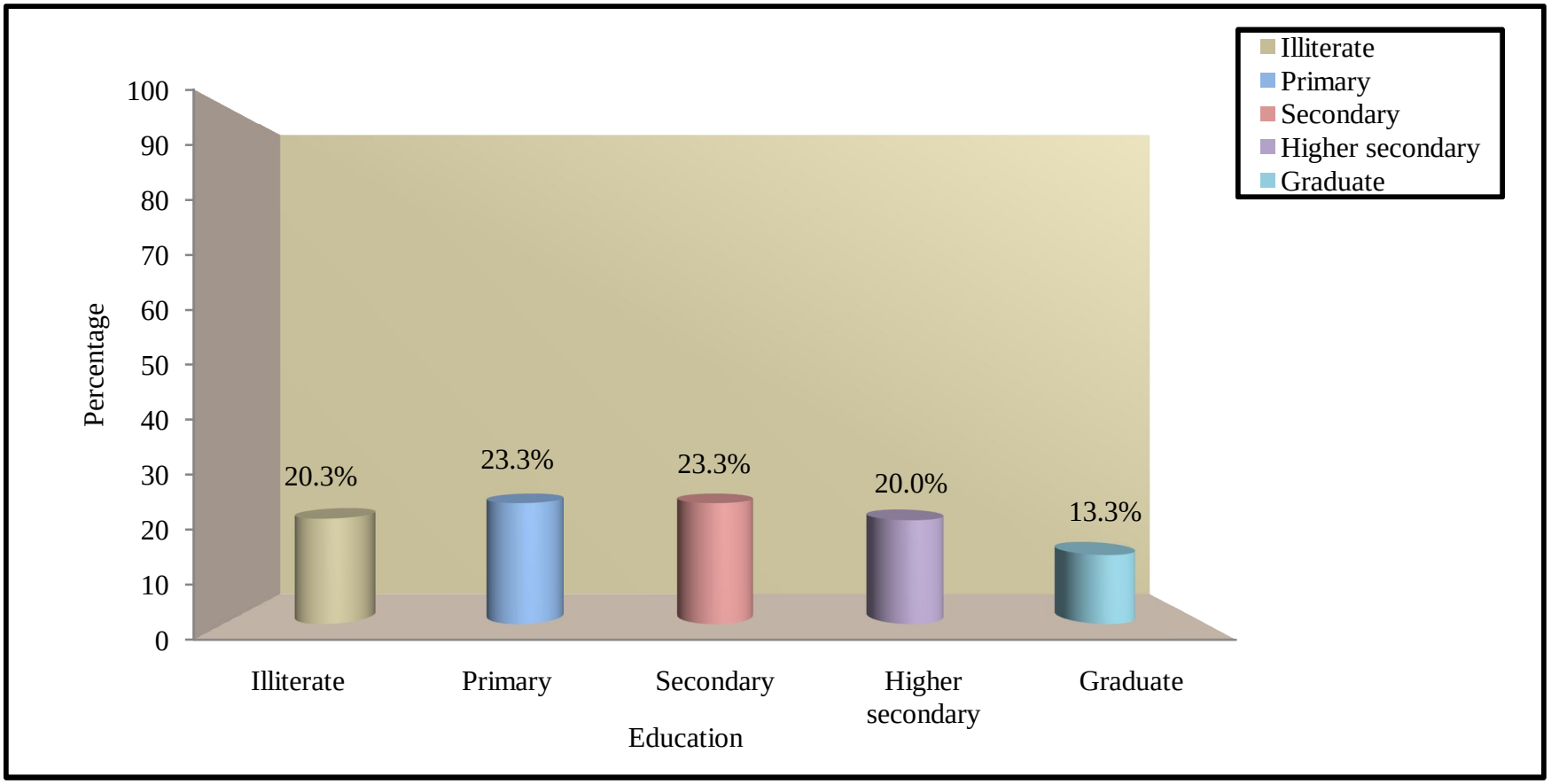

Fig. 5: Percentage distribution of education among patients undergoing cardiac surgeries.

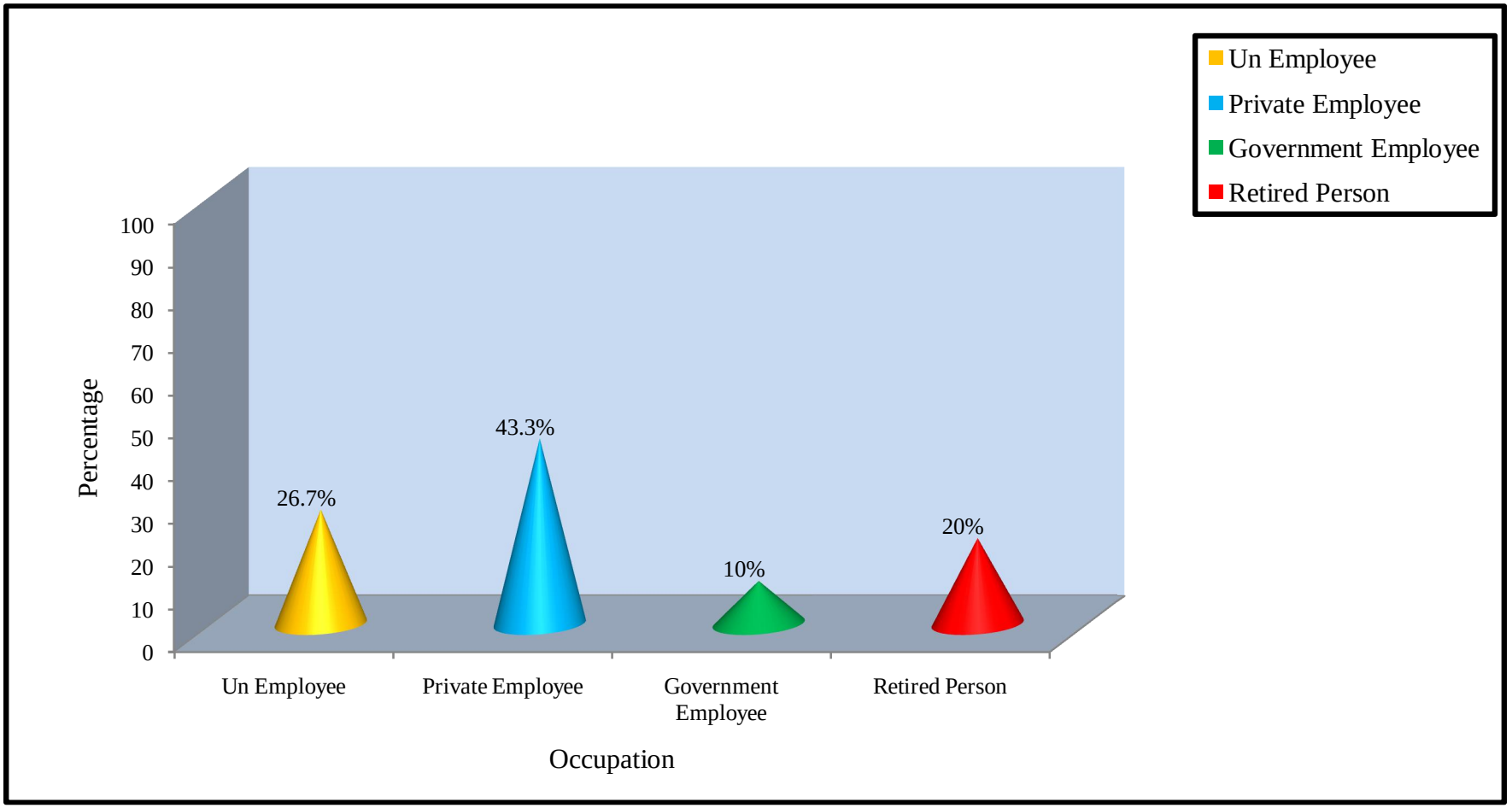

Fig. 6: Percentage distribution of occupation among patients undergoing cardiac surgeries.

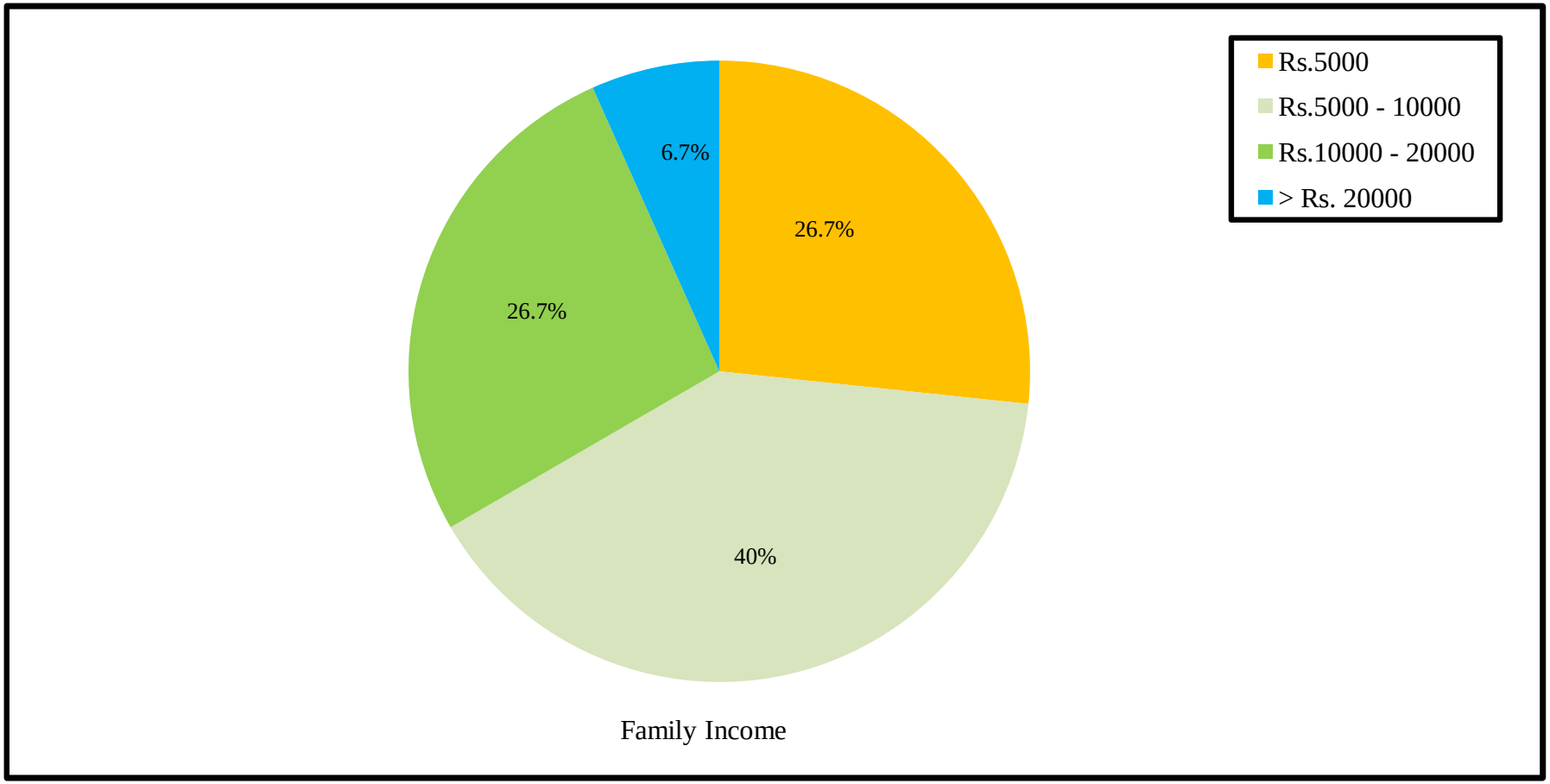

Fig. 7: Percentage distribution of family income among patients undergoing cardiac surgeries.

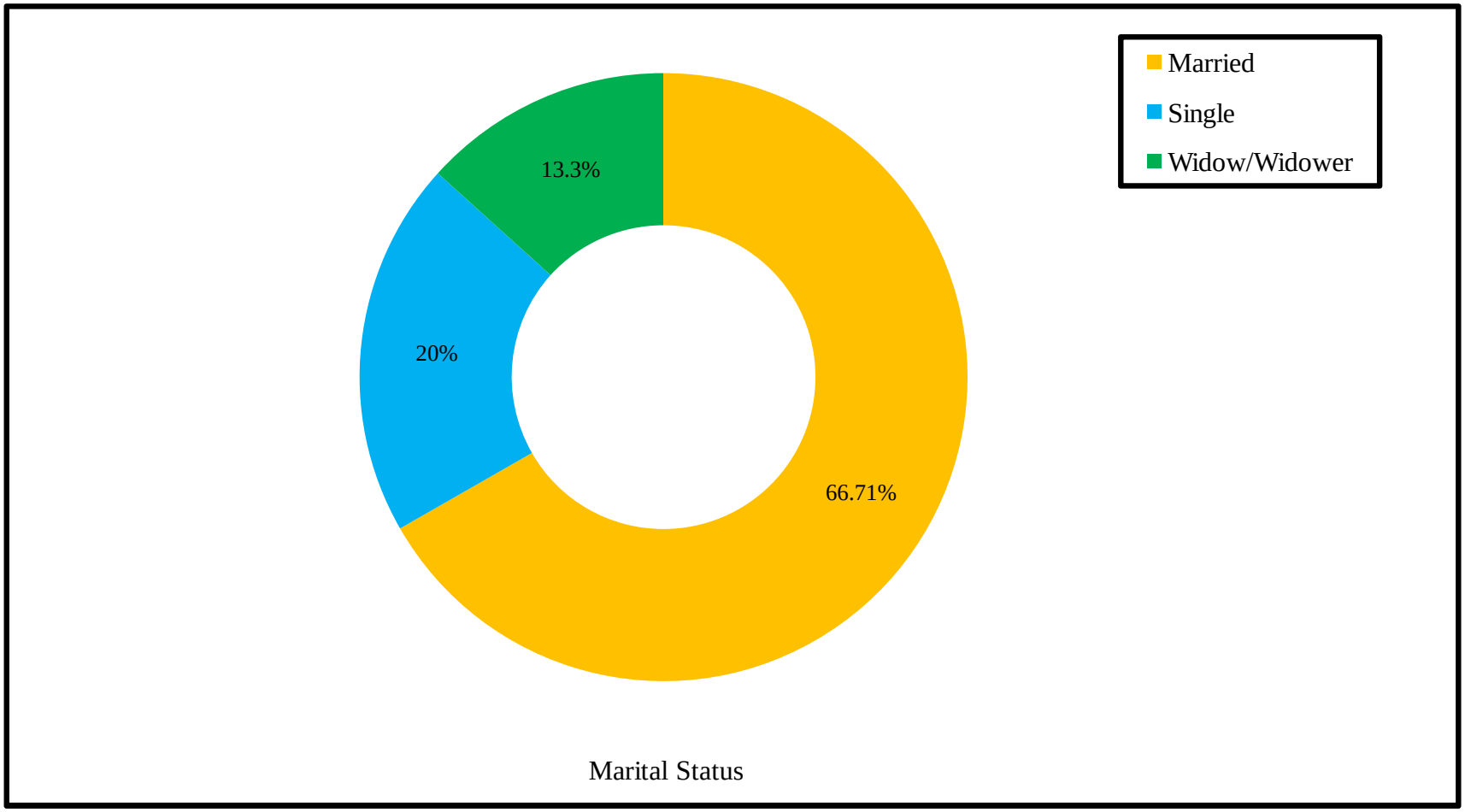

Fig. 8: Percentage distribution of marital status among patients undergoing cardiac surgeries.

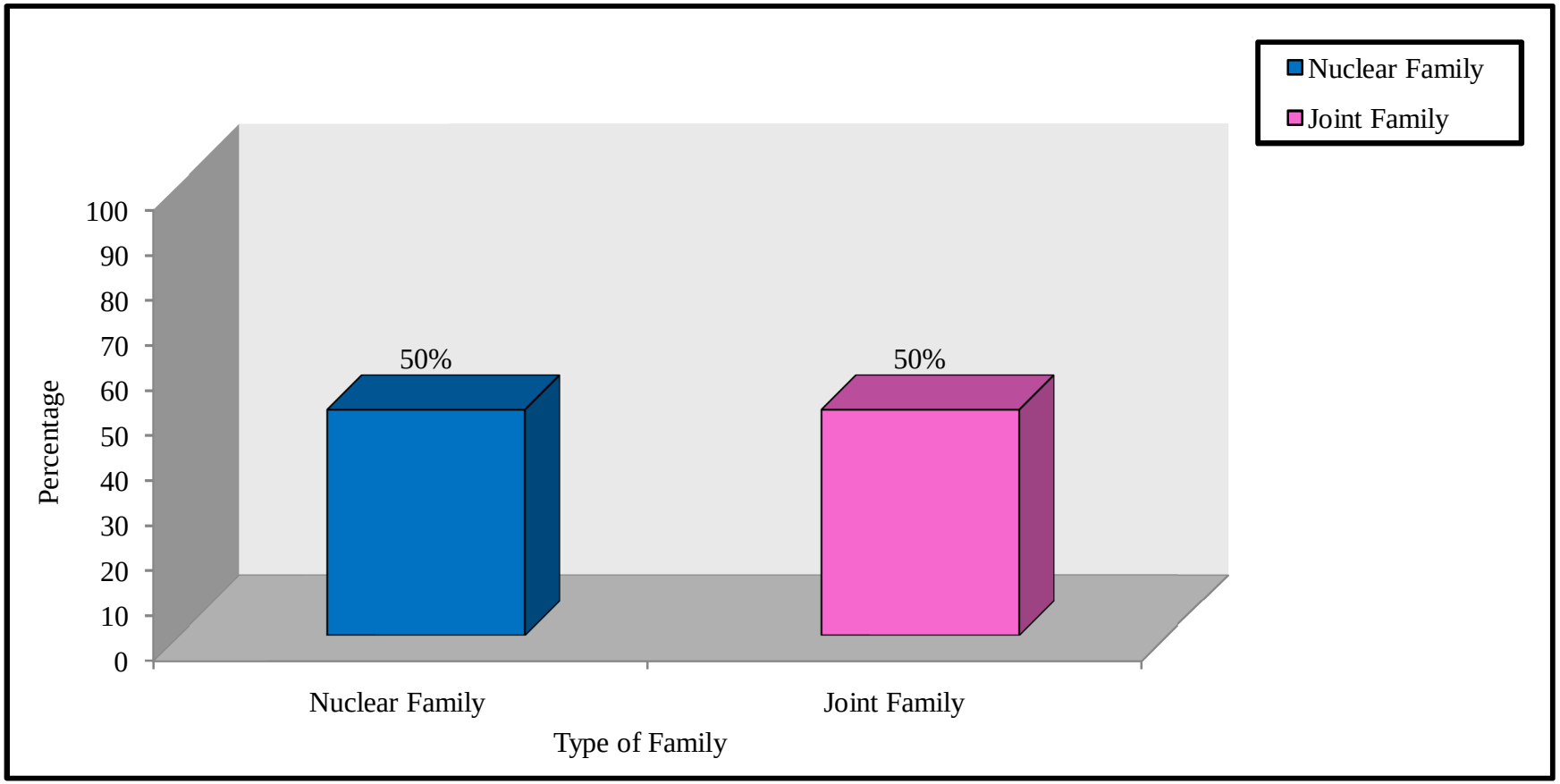

Fig. 9: Percentage distribution of type of family among patients undergoing cardiac surgeries.

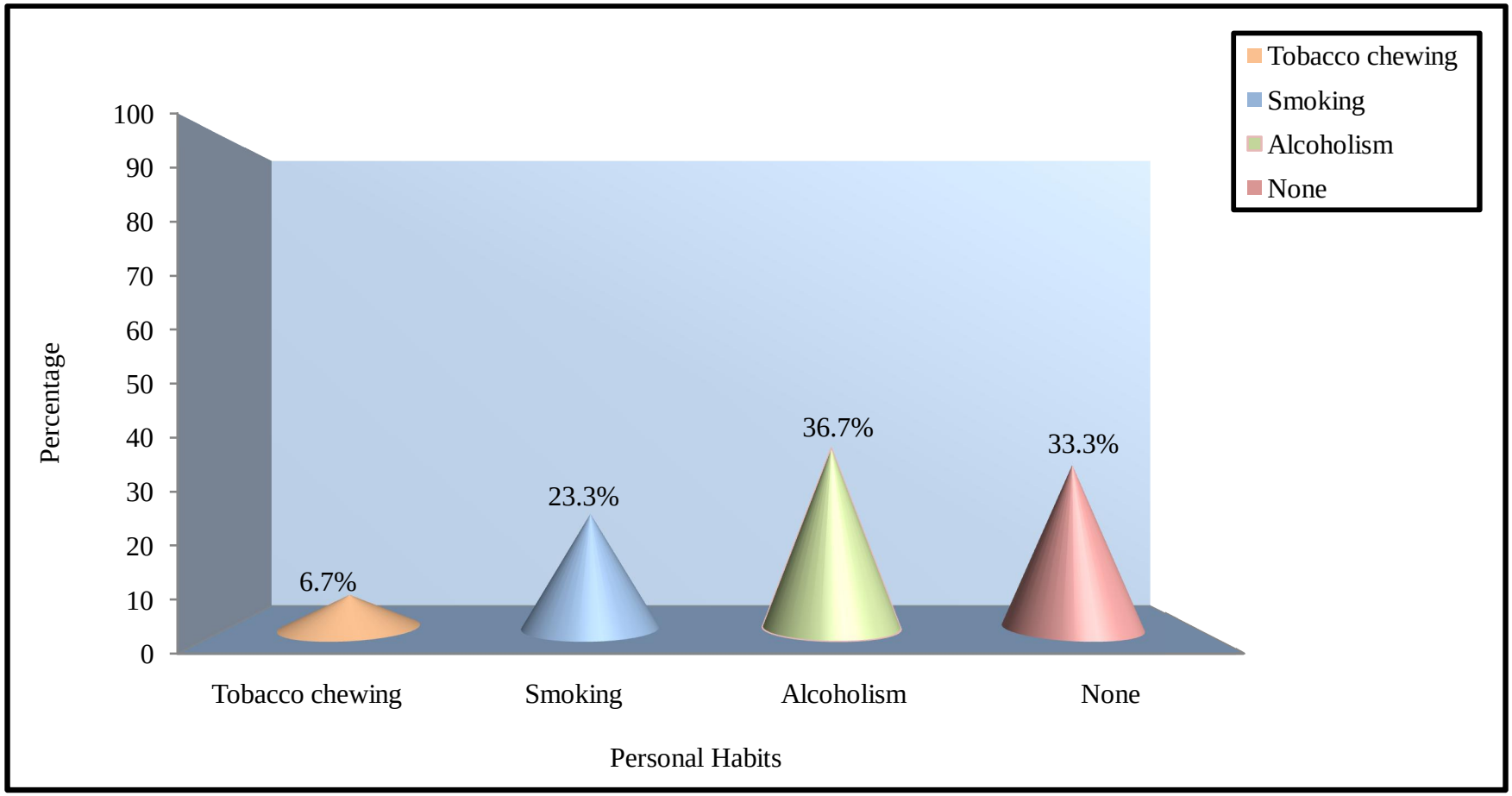

Fig. 10: Percentage distribution of personal habits among patients undergoing cardiac surgeries.

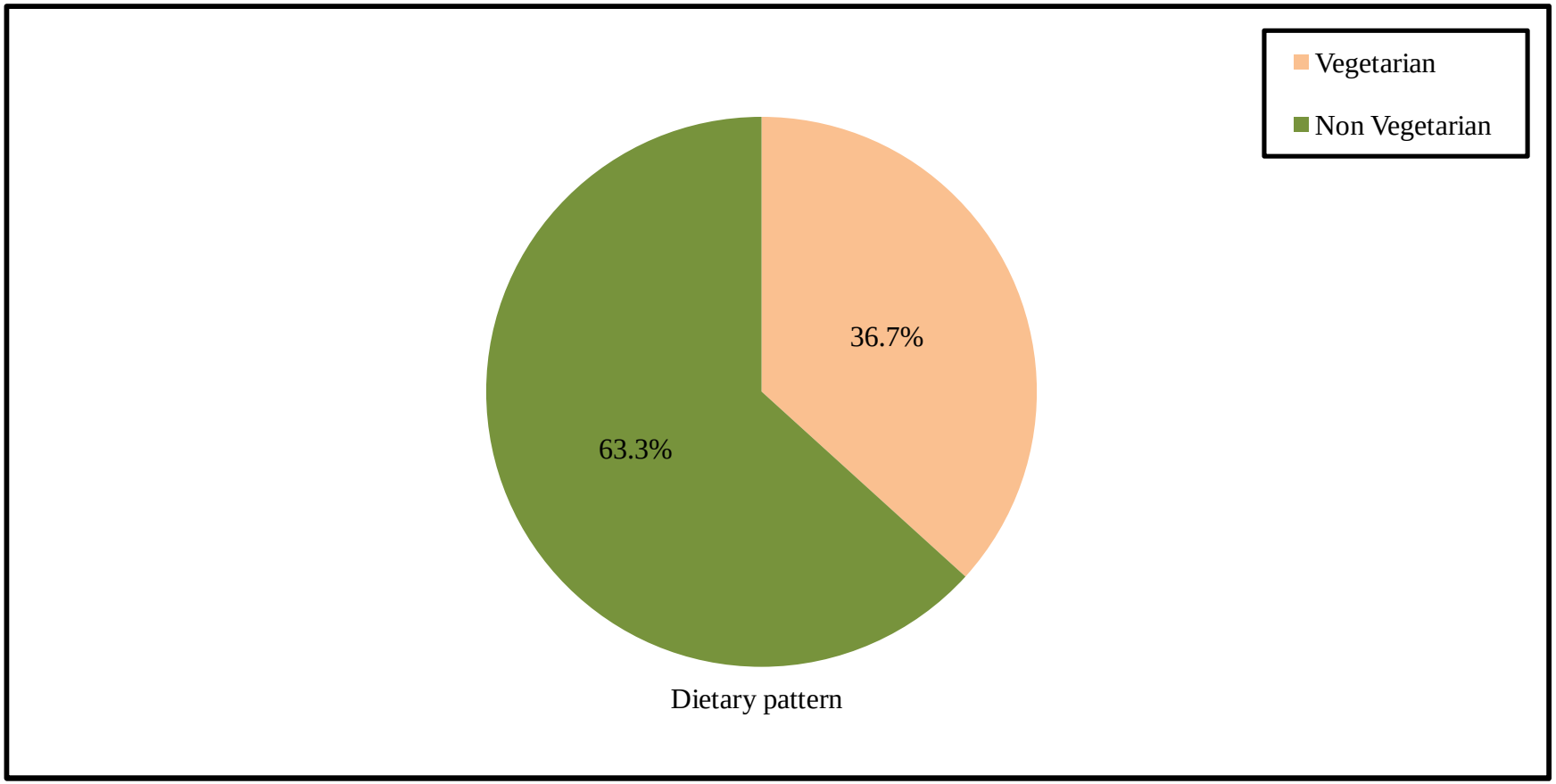

Fig. 11: Percentage distribution of dietary pattern among patients undergoing cardiac surgeries.

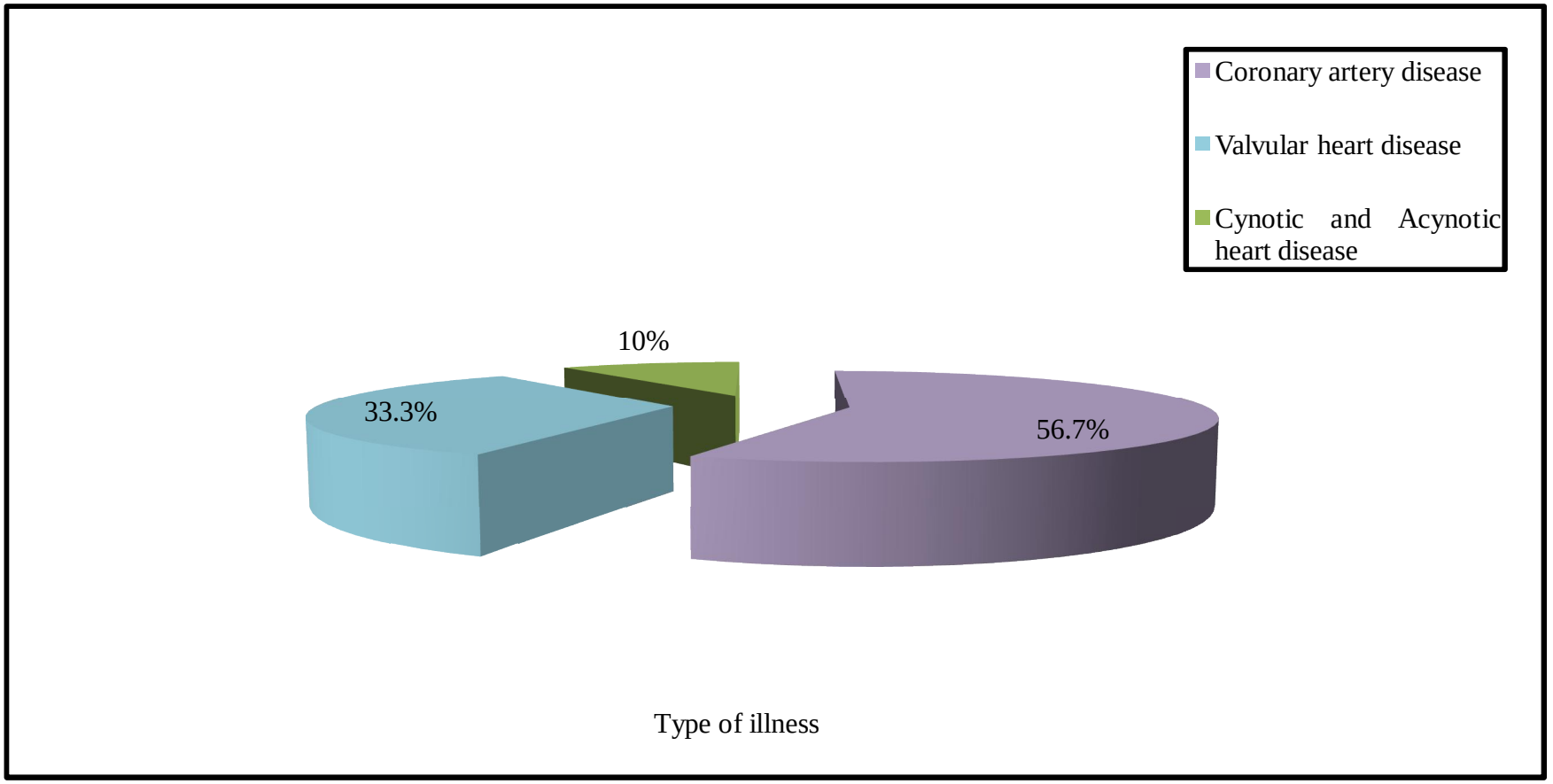

Fig. 12: Percentage distribution of type of illness among patients undergoing cardiac surgeries.

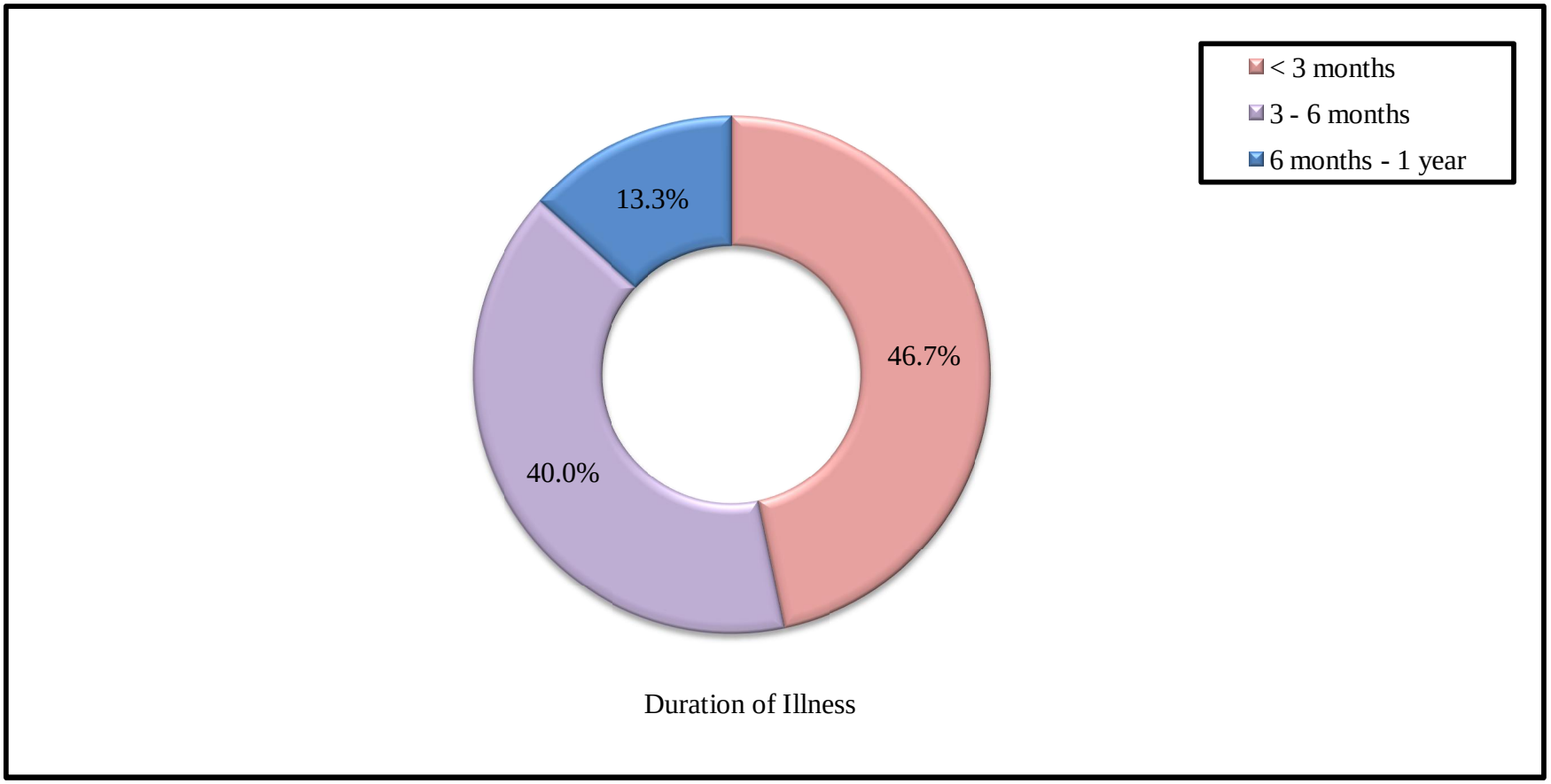

Fig. 13: Percentage distribution of duration of illness among patients undergoing cardiac surgeries.

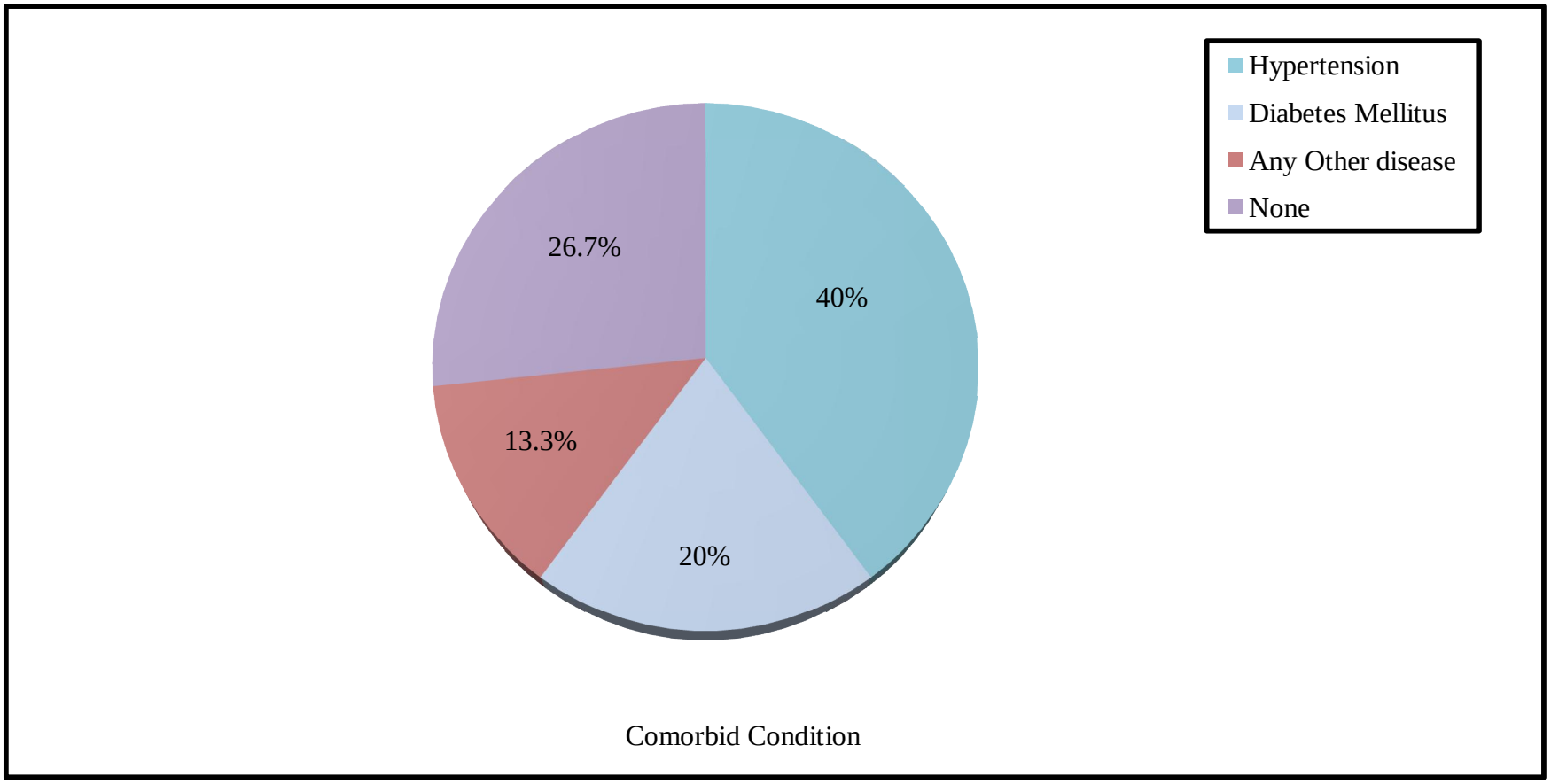

Fig. 14: Percentage distribution of co morbid condition among patients undergoing cardiac surgeries.

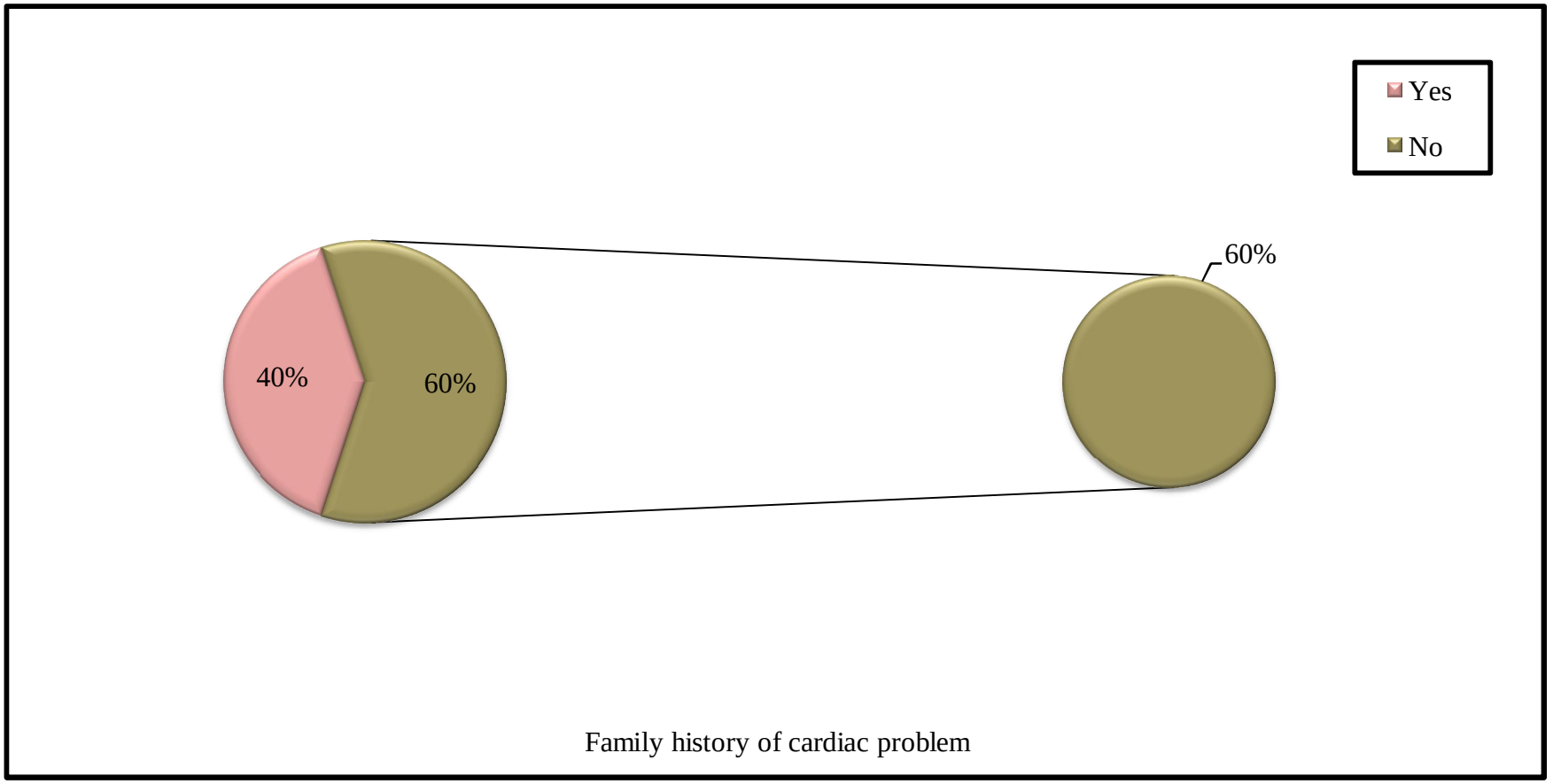

Fig. 15: Percentage distribution of family history of cardiac problem among patients undergoing cardiac surgeries.

SECTION-B

Table 2: Frequency and percentage distribution of pre interventional level of stress among patients undergoing cardiac surgeries

N=30

Level of stress	Pre intervention	
	Frequency	Percentage
Almost never	0	0
Sometimes	0	0
Fairly often	19	63.3
Very often	11	36.7

Table 2 shows the frequency and percentage distribution of pre intervention of level of stress patients undergoing cardiac surgeries. In pre test level of stress 19(63.3%) patients perceived fairly often stress and 11(36.7%) patients perceived very often stress and none of them perceived either some times and almost never level of stress among patients undergoing cardiac surgeries.

Table 3: Frequency and percentage distribution of post intervention level ofstress among patients undergoing cardiac surgeries.

N=30

Level of stress	Post intervention	
	Frequency	**percentage**
Almost never	0	0
Sometimes	23	76.7
Fairly often	7	23.3
Very often	0	0

Table 3 shows the frequency and percentage distribution of post intervention level of stress among patients undergoing cardiac surgeries. In post intervention 23 (76.7%) patients perceived stress sometimes and 7 (23.3%) patients perceived stress fairly often and none of them perceived stress either almost never or very often among patients undergoing cardiac surgeries.

SECTION-C

Table 4: Frequency and percentage distribution of pre intervention level of anxiety among patients undergoing cardiac surgeries.

N=30

Level of anxiety	Pre intervention	
	Frequency	percentage
Mild	0	0
Moderate	25	83.3
Severe	5	16.7
Very severe	0	0

Table 4 shows the frequency and percentage distribution of pre intervention level of anxiety among patients undergoing cardiac surgeries. In pre intervention level of anxiety 5 (16.7%) patients had severe level of anxiety, 25 (83.3%) patients had moderate level of anxiety and none of them had mild and very severe level of anxiety among patients undergoing cardiac surgeries.

Table 5: Frequency and percentage distribution of post intervention level of anxiety among patients undergoing cardiac surgeries.

N=30

Level of anxiety	Pre intervention	
	Frequency	**percentage**
Mild	18	60.0
Moderate	12	40.0
Severe	0	0
Very severe	0	0

Table 5 shows the frequency and percentage distribution of post intervention level of anxiety among patients undergoing cardiac surgeries. In post intervention level of anxiety 18 (60.0%) patients had normal level of anxiety, 12 (40.0%)of patients had moderate level of anxiety and none of the marked either severe anxiety or very severe level of anxiety among patients undergoing cardiac surgeries.

SECTION-D

Table 6: Comparison of pre intervention and post intervention level of stress among patients undergoing cardiac surgeries.

N=30

Level of stress	Pre intervention		Post intervention	
	Frequency	Percentage	Frequency	Percentage
Almost never	0	0	0	0
Sometimes	0	0	23	76.7
Fairly often	19	63.3	7	23.3
Very often	11	36.7	0	0

Table 6 shows the comparison of pre intervention and post intervention level of stress among patients undergoing cardiac surgeries. In pre intervention 19 (63.3%) of patients perceived fairly often stress, 11 (36.7%) patients perceived stress very often and none of them perceived stress either almost never or sometimes.In post intervention 23 (76.7%) of patients perceived sometimes stress, 7 (23.3%) of perceived fairly often stress and none of them perceived stress either very often or almost never among patients undergoing cardiac surgeries.

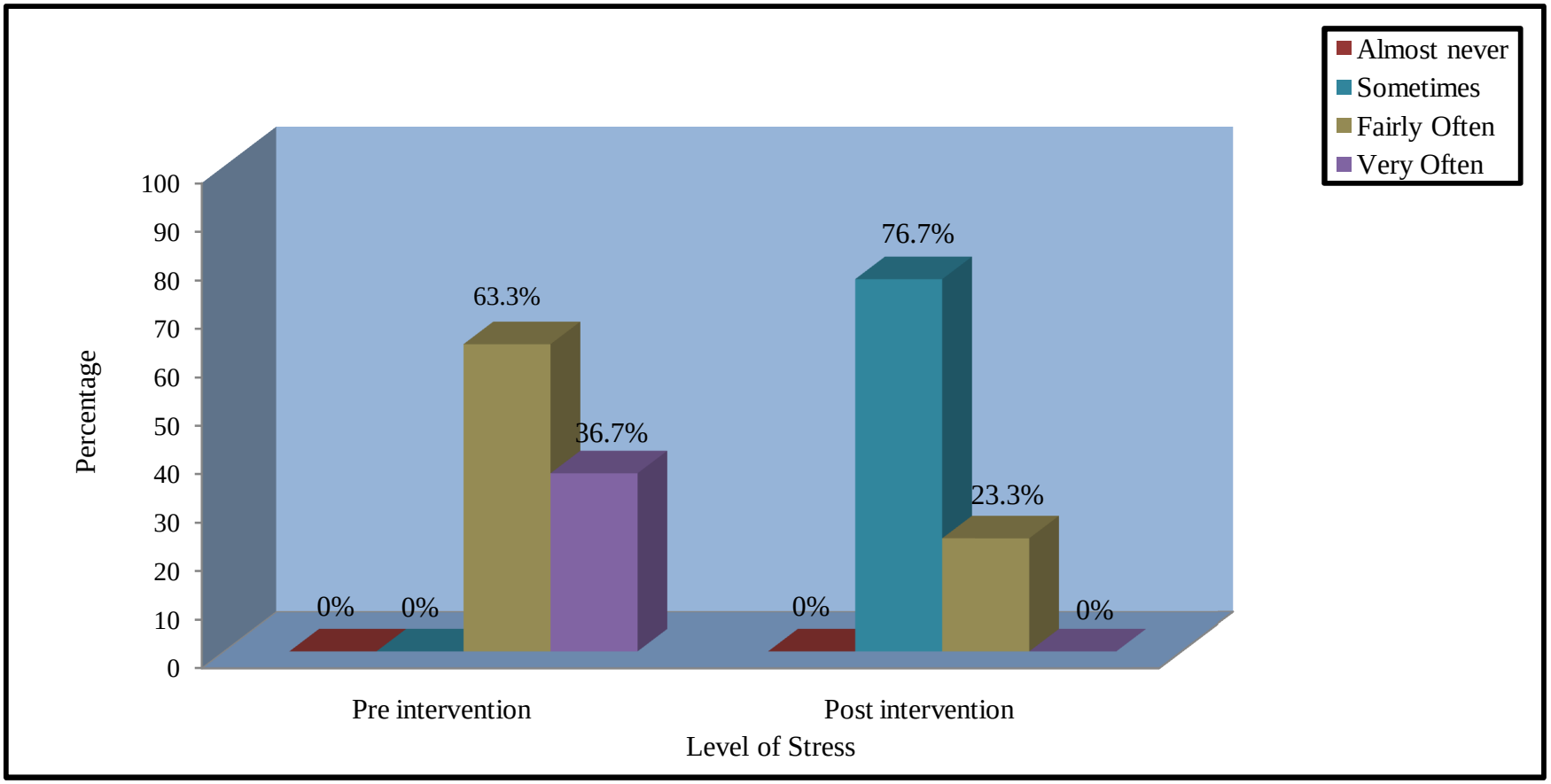

Fig. 16: Comparison of pre intervention and post intervention level of stress among patients undergoing cardiac surgeries.

SECTION-E

Table 7: Comparison of pre intervention and post intervention level of anxiety among patients undergoing cardiac surgeries.

N=30

Level ofAnxiety	Pre intervention		Post intervention	
	Frequency	Percentage	Frequency	Percentage
Mild	0	0	18	60.0
Moderate stress	25	83.5	12	40.0
Severe stress	5	16.7	0	0
Very Severe stress	0	0	0	0

Table 7 shows the comparison of pre intervention and post intervention level of anxiety among patients undergoing cardiac surgeries. In pre interventional level of anxiety 25 (83.3%) patients had moderate level of anxiety, 5 (16.7%) patients had severe level of anxiety and none of them had normal or very sever level of anxiety. In post interventional level of anxiety 18 (60.0%) of the patients had mild range of anxiety, 12 (40%) patients had moderate anxiety and none of them had severe or very sever level of anxiety.

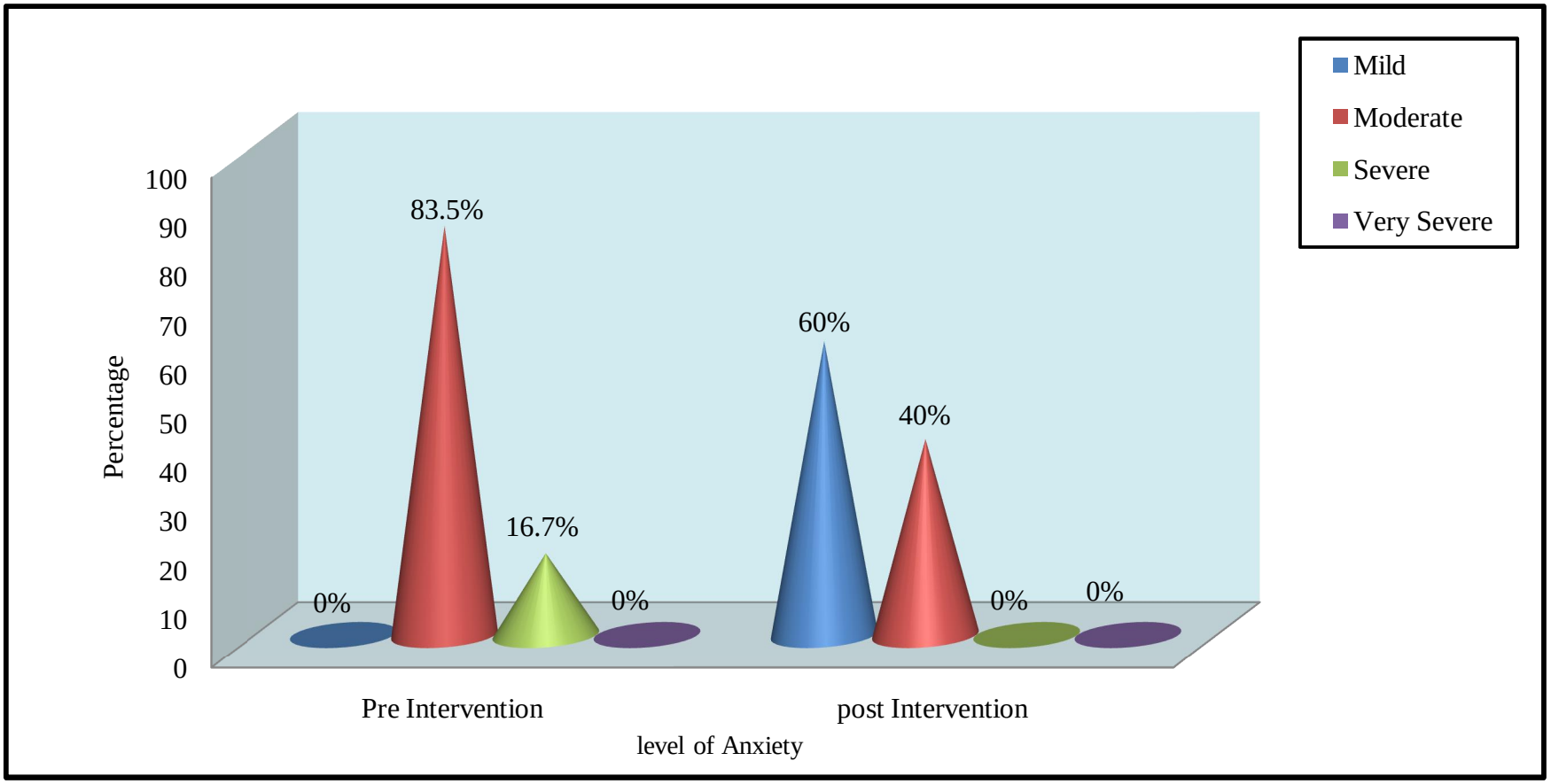

Fig. 17: Comparison of pre intervention and post intervention level of anxiety among patients undergoing cardiac surgeries.

SECTION-F

Table 8: Comparison of mean and standard deviation of pre intervention and post intervention level of stress among patient undergoing cardiac surgeries.

N=30

Level of Stress	Mean	Standard deviation	Paired 't' value
Pre intervention	29.93	3.46	12.58***
Post intervention	18.70	3.64	

*** $p<0.001$

Table 8 shows the comparison of mean and standard deviation between pre intervention and post intervention level of stress among patients undergoing cardiac surgeries. The pre intervention mean score of stress was 29.93 with standard deviation of 3.49 and in post intervention mean score was 18.70 with standard deviation of 3.64. The paired 't' value of 12.58 was very highly significant at $p<0.001$ level. Thus difference between pre and post intervention score mean decreased from 29.93 to 18.70. Thus, It indicates the difference between pre and post intervention score is statistically significant and effectiveness of progressive muscle relaxation on reduction of stress among patients undergoing cardiac surgeries.

Table 9: Comparison of mean and standard deviation between pre intervention and post intervention level of anxiety among patients undergoing cardiac surgeries.

N=30

Level of Anxiety	Mean	Standard deviation	Paired 't' value
Pre intervention	64.63	5.34	**10.6** ***
Post intervention	49.13	8.57	

*** $p<0.001$

Table 9 shows the comparison of mean and standard deviation between pre intervention and post intervention level of anxiety among patients undergoing cardiac surgeries. The pre intervention mean score of anxiety was 64.63 with standard deviation of 5.34 and the post intervention mean score was 49.13 with standard deviation of 8.57. The paired't' value of 10.6 was very highly significant at $p<0.001$ level. The difference between pre and post intervention mean score was decreased from 64.63 to 49.13. Thus, It indicates the difference between pre and post intervention score is statistically significant and effectiveness of progressive muscle relaxation on reduction of anxiety among patients undergoing cardiac surgeries.

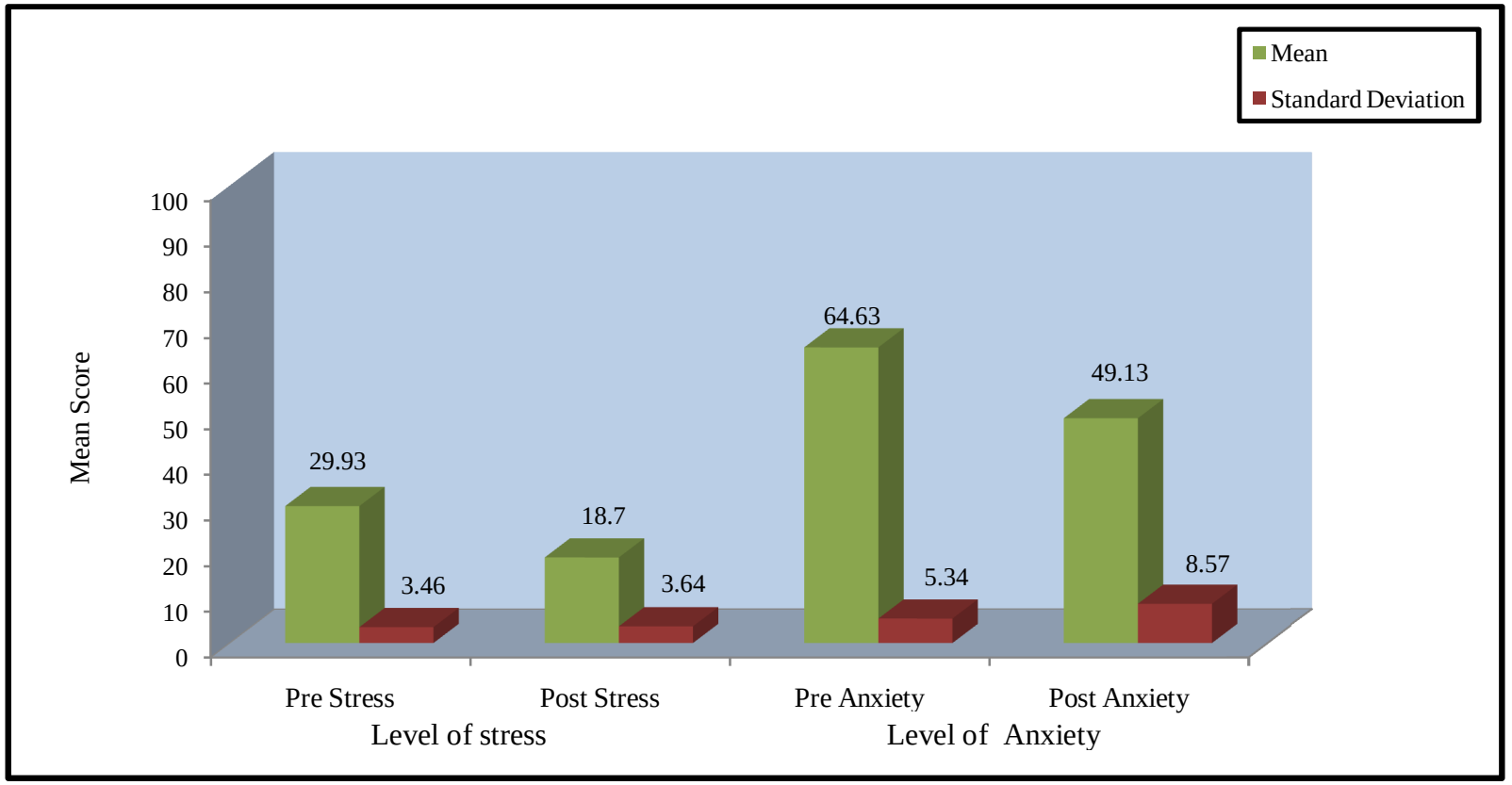

Fig. 18: Comparison of mean and standard deviation of stress and anxiety among patients undergoing cardiac surgeries.

SECTION- G

Table 10: Association of pre intervention level of stress with their selected demographic variables among patients undergoing cardiac surgeries.

N=30

S.No	Demographic Variables	Pre Intervention Level O f Stress				Chi square test χ^2
		Fairly often		Very often		
		n	%	n	%	
1	**Age in years**					
	35 -45 yrs	1	33.30	2	66.70	χ^2=1.40
	46 -55 yrs	7	63.60	4	36.40	df=3
	56 -65 yrs	6	66.70	3	33.30	NS
	> 65 yrs	5	71.40	2	28.60	
2	**Sex**					χ^2=0.06
	Male	13	61.90	8	38.10	df=1
	Female	6	66.70	3	33.30	NS
3	**Education**					
	Illiterate	4	66.70	2	33.30	χ^2=8.37
	Primary	5	71.40	2	28.60	df=4
	Secondary	5	71.40	2	28.60	NS
	Higher secondary	5	83.30	1	16.70	
	Graduate			4	100.00	
4	**Occupation**					
	Unemplotee	6	75.00	2	25.00	χ^2=3.88
	Private employee	6	46.20	7	53.80	df=3
	Government employee	3	100.00	0	0.00	NS
	Retired person	4	66.70	2	33.30	
5	**Family income**					
	<Rs. 5000	6	75.00	2	25.00	χ^2=2.36
	Rs. 5000 - 10000	7	58.30	5	41.70	df=3
	Rs. 10000 - 20000	4	50.00	4	50.00	NS
	>Rs. 20000	2	100.00			
6	**Marital status**					χ^2=1.43
	Married	12	60.00	8	40.00	df=2
	Widow	5	83.30	1	16.70	NS
	Widower	2	50.00	2	50.00	
7	**Type of Family**					χ^2=0.14
	Nuclear Family	9	60.00	6	40.00	df=1
	Joint Family	10	66.70	5	33.30	NS
8	**Personal habits**					
	Tobacco chewing	2	100.00	0	0	χ^2=1.32
	Smoking	4	57.10	3	42.90	df=3
	Alcoholism	7	63.60	4	36.40	NS
	None	6	60.00	4	40.00	
9	**Dietary pattern**					χ^2=0.66
	Vegetarian	8	72.70	2	27.30	df=3
	Non-Vegetarian	11	57.90	8	42.10	NS
10	**Type of illness**					
	Coronary artery disease	9	52.90	8	47.10	χ^2=2.71
	Valvular heart disease	7	70.00	3	30.00	df=2
	Cynotic and Acynotic	3	100.00	0	0.00	NS
11	**Duration of illness**					
	< 3months	8	57.10	6	42.90	χ^2=2.67
	3 - 6 months	7	58.30	5	41.70	df=2
	6 months - 1 year	4	100.00			NS
12	**Comorbid condition**					
	Hypertension	6	50.00	6	50.00	χ^2=3.62
	DM	3	50.00	3	50.00	df=3
	Any other disease	3	75.00	1	25.00	NS
	None	7	87.50	1	12.50	
13	**Family history**					
	Yes	8	66.70	4	33.30	χ^2=0.10
	No	11	61.10	7	38.90	df = 1
						NS

NS- Non significant

Table 10 shows the association of pre intervention level of stress with their selected demographic variables among patient undergoing cardiac surgeries. The analysis revealed that there was no statistical significant association between the demographic variables and pre test levels of stress.

Table 11: Association of post intervention level of stress with their selected demographic variables among patients undergoing cardiac surgeries.

N=30

S.No	Demographic Variables	Post Intervention Level O f Stress				Chi square test χ^2
		Some times		Fairly often		
		n	%	n	%	
1	**Age in years**					
	35 -45 yrs	0	0.00	3	100.00	**χ^2=8.63**
	46 -55 yrs	7	63.60	4	36.70	**df=3**
	56 -65 yrs	6	66.70	3	33.30	**S***
	> 65 yrs	6	85.70	1	14.30	
2	**Sex**					χ^2=0.06
	Male	13	61.90	8	38.10	df=1
	Female	6	66.70	3	33.30	NS
3	**Education**					
	Illiterate	5	83.30	1	16.70	χ^2=6.88
	Primary	6	85.70	1	14.30	df=4
	Secondary	2	28.60	5	71.40	NS
	Higher secondary	3	50.00	3	50.00	
	Graduate	3	75.00	1	25.00	
4	**Occupation**					
	Unemployee	6	75.00	2	25.00	χ^2=3.88
	Private employee	6	46.20	7	53.80	df=3
	Government employee	3	100.00	0	0.00	NS
	Retired person	4	66.70	2	33.30	
5	**Family income**					
	<Rs. 5000	2	25.00	6	75.00	**χ^2=8.28**
	Rs. 5000 - 10000	8	66.70	4	33.30	**df=3**
	Rs. 10000 - 20000	7	87.50	1	12.50	**S***
	>Rs. 20000	2	100.00	0	0.00	
6	**Marital status**					
	Married	11	55.00	9	45.00	χ^2=1.87
	Widow	5	83.30	1	16.70	df=2
	Widower	3	75.00	1	25.00	NS
7	**Type of Family**					χ^2=1.29
	Nuclear Family	8	53.30	7	46.70	df=1
	Joint Family	11	73.30	4	26.70	NS
8	**Personal habits**					
	Tobacco chewing	1	50.00	1	50.00	χ^2=5.61
	Smoking	2	28.60	5	71.40	df=3
	Alcoholism	9	81.80	2	18.20	NS
	None	7	70.00	3	30.00	
9	**Dietary pattern**					χ^2=0.01
	Vegetarian	7	63.60	4	36.40	df=1
	Non-Vegetarian	12	63.20	7	36.80	NS
10	**Type of illness**					
	Coronary artery disease	8	47.10	9	52.90	χ^2=4.87
	Valvular heart disease	8	80.00	2	20.00	df=2
	Cynotic and Acynotic	3	100.00	0	0.00	NS
11	**Duration of illness**					
	< 3months	8	57.10	6	42.90	**χ^2=8.98**
	3 - 6 months	9	75.00	3	25.00	**df=2**
	6 months - 1 year	2	50.00	2	50.00	**S****
12	**Comorbid condition**					
	Hypertension	6	50.00	6	50.00	χ^2=6.31
	DM	3	50.00	3	50.00	df=3
	Any other disease	2	50.00	2	50.00	NS
	None	8	100.00	0	0.00	
13	**Family history**					χ^2=0.10
	Yes	8	66.70	4	33.30	df=1
	No	11	61.10	7	38.90	NS

NS- Non significant, S-significant *P≤0.05 **P≤0.01

Table 11 shows the association between post intervention level of stress with their selected demographic variables among patients undergoing cardiac surgeries.

The chi square value of 8.63 showed that there was a significant association between the age of the patient and post test level of stress among patients undergoing cardiac surgeries at the level of $P<0.05$. The chi square value of 8.28 showed that there was a significant association between the family income of the patient and post test level of stress among patients undergoing cardiac surgeries at the level of $P<0.05$. The chi square value of 8.98 showed that there was a highly significant association between the duration of illness of the patient and post test level of stress among patients undergoing cardiac surgeries at the level of $P<0.01$.

So the progressive muscle relaxation technique was effective in reducing the level of stress among patients undergoing cardiac surgeries.

Table 12: Association of pre intervention level of anxiety with their selected demographic Variables among patients undergoing cardiac surgeries.

N=30

S.No	Demographic Variables	Pre Intervention Level Of Anxiety				Chi square test χ^2
		Moderate		severe		
		n	%	n	%	
1	**Age in years**					
	35 -45 yrs	2	66.70	1	33.30	χ^2=1.28
	46 -55 yrs	10	90.90	1	9.10	df=3
	56 -65 yrs	7	77.80	2	22.20	NS
	> 65 yrs	6	85.70	1	14.30	
2	**Sex**					
	Male	16	76.20	5	23.80	χ^2=2.57
	Female	9	100.00	0	0.00	df=1
						NS
3	**Education**					
	Illiterate	4	66.70	2	33.30	χ^2=2.88
	Primary	6	85.70	1	14.30	df=4
	Secondary	7	100.00	0	0.00	NS
	Higher secondary	5	83.30	1	16.70	
	Graduate	3	75.00	1	25.00	
4	**Occupation**					
	Unemployee	7	87.50	1	12.50	χ^2=1.08
	Private employee	10	76.90	3	23.10	df=3
	Government employee	3	100.00	0	0.00	NS
	Retired person	5	83.30	1	16.70	
5	**Family income**					
	<Rs. 5000	7	87.50	1	12.50	χ^2=1.20
	Rs. 5000 - 10000	9	75.00	3	25.00	df=3
	Rs. 10000 - 20000	7	87.50	1	12.50	NS
	>Rs. 20000	2	100.00	0	0.00	
6	**Marital status**					
	Married	16	80.00	4	20.00	χ^2=0.96
	Widow	5	83.30	1	16.70	df=3
	Widower	4	100.00	0	0.00	NS
7	**Type of Family**					
	Nuclear Family	11	73.30	4	26.70	χ^2=2.14
	Joint Family	14	93.30	1	6.70	df=1
						NS
8	**Personal habits**					
	Tobacco chewing	2	100.00	0	0.00	χ^2=4.63
	Smoking	4	57.10	3	42.90	df=3
	Alcoholism	10	90.90	1	9.10	NS
	None	9	90.00	1	10.00	
9	**Dietary pattern**					
	Vegetarian	10	90.90	1	9.10	χ^2=0.71
	Non-Vegetarian	15	78.90	4	21.10	df=1
						NS
10	**Type of illness**					
	Coronary artery disease	14	82.40	3	17.60	χ^2=0.69
	Valvular heart disease	8	80.00	2	20.00	df=2
	Cynotic and Acynotic	3	100.00	0	0.00	NS
11	**Duration of illness**					
	< 3months	10	71.40	4	28.60	χ^2=2.82
	3 - 6 months	11	91.70	1	8.30	df=2
	6 months - 1 year	4	100.00	0	0.00	NS
12	**Comorbid condition**					
	Hypertension	10	83.30	2	16.70	χ^2=0.30
	DM	5	83.30	1	16.70	df=3
	Any other disease	3	75.00	1	25.00	NS
	None	7	87.50	1	12.50	
13	**Family history**					χ^2=1.00
	Yes	9	75.00	3	25.00	df=1
	No	16	88.90	2	11.10	NS

NS- Non significant

Table 12 shows the association between pre intervention level of anxiety with their selected demographic variables among patients undergoing cardiac surgeries. The analysis revealed that there was no statistical significant association between the demographic variables and preoperative levels of anxiety.

Table 13: Association of post interventionlevel of anxiety with their selecteddemographic variables among patients undergoing cardiac surgeries.

N=30

S.No	Demographic Variables	Post Intervention Level of Anxiety				Chi square test χ^2
		Normal Range		Mild to Moderate		
		n	%	n	%	
1	**Age in years**					
	35 -45 yrs	2	66.70	1	33.30	$\chi2=0.21$
	46 -55 yrs	7	63.60	4	36.40	df=3
	56 -65 yrs	5	55.60	4	44.40	S
	> 65 yrs	4	57.10	3	42.90	
2	**Sex**					
	Male	11	52.40	10	47.60	$\chi2=0.06$
	Female	7	77.80	2	22.20	df=3
						NS
3	**Education**					
	Illiterate	5	83.30	1	16.70	$\chi2=6.88$
	Primary	5	71.40	2	28.60	df=4
	Secondary	4	57.10	3	42.90	NS
	Higher secondary	1	16.70	5	83.30	
	Graduate	3	75.00	1	25.00	
4	**Occupation**					
	Unemployee	6	75.00	2	25.00	$\chi2=1.26$
	Private employee	7	53.80	6	46.20	df=3
	Government employee	2	66.70	1	33.30	NS
	Retired person	3	50.00	3	50.00	
5	**Family income**					
	<Rs. 5000	2	25.00	6	75.00	**$\chi2=9.83$**
	Rs. 5000 - 10000	4	33.30	8	66.70	**df=3**
	Rs. 10000 - 20000	7	87.50	1	12.5	**S***
	>Rs. 20000	2	100.00	0	0.00	
6	**Marital status**					
	Married	8	40.00	12	60.00	**$\chi2=10.07$**
	Widow	6	100.00	0	0.00	**df=2**
	Widower	4	100.00	0	0.00	**S****
7	**Type of Family**					$\chi2=2.22$
	Nuclear Family	7	46.70	8	53.30%	df=2
	Joint Family	11	73.30	4	26.70%	NS
8	**Personal habits**					
	Tobacco chewing	2	100.00	0	0	$\chi2=4.96$
	Smoking	2	28.60	5	71.40	df=3
	Alcoholism	8	72.70	3	27.30	NS
	None	6	60.00	4	40.00	
9	**Dietary pattern**	7	63.60	4	36.40	$\chi2=0.09$
	Vegetarian	11	57.90	8	42.10	df=1
	Non-Vegetarian					NS
10	**Type of illness**					
	Coronary artery disease	11	64.70	6	35.30	$\chi2=0.62$
	Valvular heart disease	5	50.00	5	50.00	df=2
	Cynotic and Acynotic	2	66.70	1	33.30	NS
11	**Duration of illness**	10	71.40	4	28.60	
	< 3months					**$\chi2=9.82$**
	3 - 6 months	11	91.70	1	8.30	**df=2**
	6 months - 1 year	4	100.0	0	0	**S***
12	**Comorbid condition**					
	Hypertension	10	83.30	2	16.70	$\chi2=0.30$
	DM	5	83.30	1	16.70	df=3
	Any other disease	3	75.0	1	25.00	NS
	None	7	87.50	1	12.50	
13	Family history	7	58.3	5	41.70	$\chi2=0.10$
	Yes	11	61.10	7	38.90	df=1
	No					NS

NS- Non significant, S-significant *P≤0.05 **P≤0.01

Table 13 shows the association between post intervention level of anxiety with their selected demographic variables among patients undergoing cardiac surgeries.

The chi square value of 9.85 showed that there was a significant association between the family income of the patient and post test level of stress among patients undergoing cardiac surgeries at the level of P<0.05. The chi square value of 10.07 showed that there was a highly significant association between the marital status of the patient and post test level of stress among patients undergoing cardiac surgeries at the level of P<0.01. The chi square value of 9.82 showed that there was significant association between the duration of illness of the patient and post test level of stress among patients undergoing cardiac surgeries at the level of P<0.05.

So the progressive muscle relaxation technique was effective in reducing the level of anxiety among patients undergoing cardiac surgeries.

DISCUSSION

CHAPTER V

DISCUSSION

This chapter deals with discussion of the results obtained from the statistical analysis. A Study aimed to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries in Dr. Kamakshi Memorial Hospital at Chennai.

The hypothesis formulated was that there is a significant association between the progressive muscle relaxation therapy and stress, anxiety reduction among patients undergoing cardiac surgeries. The review of literature include in this study provides a strong foundation for this study including the basis for conceptual frame work and formation of tool.

The conceptual frame work used for this study was based on Roy's adaptation model. The research design selected for this study was pre experimental one group pre test post test design. The samples consist of patients who have undergoing cardiac surgeries in Dr. Kamakshi Memorial Hospital, at Chennai. Purposive sampling technique was used to select the samples. The tool used for data collection was prepared by the investigator.

The tool was given to the sample to assess the pre interventional level of stress and anxiety. Progressive muscle relaxation techniques were given once in a day for5 days of preoperative period in 20 to 30 minutes duration. The post test was conducted at the end of 5th day using the same tool by means of interview method.

The data collected were analyzed using descriptive and interferential statistics. The distribution of personnel demographic characteristics of study shows that the majority age of patients undergoing cardiac surgeries 11 (36.7%). with respect to gender of patients undergoing cardiac surgeries, the majority of the patients21 (70.0%) were male, Regard to education, the majority of the patients

7 (23.3%) patients have completed primary education, 7 (23.3%) patients have completed secondary education.

In regard to occupation the majority of patients undergoing cardiac surgeries 8 (26.7%) were unemployed, Related to family income, the majority of patients 12 (40.0%) were getting the salary of Rs 5000-10000, Regarding type of family undergoing cardiac surgeries 15 (50.0%) were living in nuclear family, With respect to personnel habit, the majority of patients undergoing cardiac surgeries 11 (36.7%) were drinking alcohol. Considering the dietary habit of patient undergoing cardiac surgeries 19 (63.3%) were non vegetarians.

With respect the type of cardiac illness 17 (56.7%) have coronary artery disease and 10 (33.3%) have valvular heart disease, considering the duration of cardiac illness 14 (46.7%) patients have below 3 month of duration of cardiac illness, Considering the co morbid condition the majority of cardiac patients 12 (40.0%) have hypertension. Regarding the family history of cardiac problem the majority of18 (60.0%) has no history of cardiac problem.

The first objective was to assess the pre intervention level of stress and anxiety among patients undergoing cardiac surgeries.

Thepre intervention level of stress 19 (63.3%) patients perceived fairly often stress and 11 (36.7%) patients perceived very often stress and none of the patient perceived either some times and almost never stress. In pre intervention level of anxiety 5 (16.7%) patients had severe level of anxiety, 25 (83.3%) patients had moderate anxiety and none of them had mild and very severe level of anxiety.

The present study result is correlating with Smriti. A., et al., (2000) had conducted a Experimental Study to assess the effectiveness of relaxation therapy on the preoperative anxiety, depression Patients undergoing cardiac surgery in a Selected hospital of New Delhi. Totally 64 were selected for this study and divided in to two experimental and control group. The experimental group received the progressive muscle relaxation training on the preoperative duration and the

controlled group received the usual care. The result showed that relaxation therapy was found to have significant reduction on pre and postoperative anxiety, depression. Thus the study concluded that the experimental group felt relaxed and found relaxation therapy as an effective measure in reducing their anxiety and depression for the cardiac surgeries patient.

The second objective was to assess the post intervention level of stress and anxiety among patient undergoing cardiac surgeries.

In post intervention level of stress 23 (76.7%) patients perceived sometimes stress and 7 (23.3%) patients perceived fairly often stress and none of the patients perceived almost never and vary often stress. In post intervention level of anxiety 18 (60.0%) patients are having normal range anxiety, 12 (40.0%)of them are having moderate anxiety and none of them are having marked to severe anxiety/extreme anxiety level of anxiety.

The present study result is correlating with Sendelbach. S. E., (2006)conducted a experimental study for assess the effects of relaxation therapy on physiological and psychological outcomes for patients undergoing cardiac surgery. A total 86 ischemic and valvular heart disease patients were randomized selected into two groups the experimental and control group. The result showed that significant reduction in anxiety and stress andpain was demonstrated in the group that received relaxation therapy compared with the control group The concluded that Patients admitted for cardiac surgery benefit the relaxation therapy for reducing the stress, anxiety and pain.

The third objective to assess the effectiveness of progressive muscle relaxation therapy on reducing the stress and anxiety among patient undergoing cardiac surgeries.

In comparison of pre intervention and post intervention level of stress, the pre intervention mean score of stress was 29.93 with standard deviation of 3.49 and in post intervention mean score was 18.70 with standard deviation of 3.64. The

paired‘t’ value of 12.58 was very highly significant at p<0.001 level. It indicates that difference between pre and post intervention score is statistically significant and effectiveness of progressive muscle relaxation on reduction of stress among patients undergoing cardiac surgeries.

In comparison of pre intervention and post intervention level of anxiety, The pre intervention mean score of anxiety was 64.63 with standard deviation of 5.34 and in post intervention mean score was 49.13 with standard deviation of 8.57. The paired‘t’ value of 10.6 was very highly significant at p<0.001 level. It indicates the difference between pre and post intervention score is statistically significant and effectiveness of progressive muscle relaxation on reduction of anxiety among patients undergoing cardiac surgeries.

The fourth objective was to associate the pre intervention and post intervention level of stress and anxiety among patient undergoing cardiac surgeries with selected demographic variables.

In association with the demographic variables with pre test and post test level of stress, there is no statistically significant association found between pre test level of stress with their demographic variables but in post test level of stress there was a significant association found. The chi square value of 8.63 showed that there was a significant association between the age of the patient and post level of stress among patients undergoing cardiac surgeries at the level of P<0.05. The chi square value of 8.28 showed that there was a significant association between the family income of the patient and post level of stress among patients undergoing cardiac surgeries at the level of P<0.05.

The chi square value of 8.98 showed that there was a highly significant association between the duration of illness of the patient and post level of stress among patients undergoing cardiac surgeries at the level of P<0.01, So the progressive muscle relaxation technique was effective in reducing the level of stress among patients undergoing cardiac surgeries.

In association with the demographic variables with pre test and post test level of anxiety, there is no statistically significant association found between pre test level of anxiety with their demographic variables but in post test level of stress there was a significant association found. The chi square value of 9.85 showed that there was a significant association between the family income of the patient and post level of stress among patients undergoing cardiac surgeries at the level of $P<0.05$. The chi square value of 10.07 showed that there was a highly significant association between the marital status of the patient and post level of stress among patients undergoing cardiac surgeries at the level of $P<0.01$.

The chi square value of 9.82 showed that there was significant association between the duration of illness of the patient and post level of stress among patients undergoing cardiac surgeries at the level of $P<0.05$. So the progressive muscle relaxation technique was effective in reducing the level of anxiety among patients undergoing cardiac surgeries.

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SUMMARY, CONCLUSION, NURSING IMPLICATIONS, RECOMMENDATIONS, AND LIMITATIONS

CHAPTER VI

SUMMARY, CONCLUSION, NURSING IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

The heart of the research project lies in reporting the findings of the study. This is the most creative and demanding part of the study. This chapter gives a brief account of the present study including the conclusion drawn from the findings, recommendations, limitations of the study, suggestions for the study and nursing implications. The present study was to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries in Dr.kamakshi Memorial Hospital at Chennai.

SUMMARY

Stress and anxiety is a normal part of life .A certain amount of stress is normal and necessary for survival and it is internal or external influences that disrupt an individual's normal state of well being. These influences are capable of affecting health by causing emotional distress and leading to a variety of physiological changes .these changes include increased heart rate, elevated blood pressure and a dramatic rise in hormone levels. Progressive muscle relaxation technique is one of the simplest forms of relaxation technique Progressive Muscle Relaxation Therapy (PMRT) is technique developed by Chicago physician Edmund Jacobson in the 1920s. Techniques involving relaxation are widely used by people to reduce anxiety and cope with stress-related problems.

This study was done to evaluate the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing cardiac surgeries in Dr.kamakshi Memorial Hospital at Chennai.

The objectives of the study were as follows,

1. To assess the pre intervention level of stress and anxiety among patients undergoing cardiac surgeries.
2. To assess the post intervention level of stress and anxiety among patient undergoing cardiac surgeries.
3. To assess the effectiveness of progressive muscle relaxation therapy on reducing the stress and anxiety among patient undergoing cardiac surgeries.
4. To associate the pre intervention and post intervention level of stress and anxiety among patient undergoing cardiac surgeries with selected demographic variables.

The hypothesis formulated was there is no association between the progressive muscle relaxation therapy and stress, anxiety reduction among patients undergoing cardiac surgeries. The review of literature include in this study provides a strong foundation for this study including the basis for conceptual frame work and formation of tool.

The conceptual frame work used for this study was based on Roy's adaptation model. The research design selected for this study was pre experimental one group pre test post test design. About 30 elderly were selected with stress and anxiety in little drops old age home for aged destitute at Chennai. Purposive sampling technique was used to select the samples. The tool used for data collection was prepared by the investigator.

The data collection tool was validated and reliability was established. After the pilot study the data collection for the main study was done. The data were collected by interviewing the patients. Then the progressive muscle relaxation therapy was administered for 20 to 30 minutes. The post intervention was conducted after 5 days using the same tool to assess the effectiveness of progressive muscle relaxation therapy on reduction of stress and anxiety among patient undergoing cardiac surgeries.

The data collection tool was validated and reliability was established. After the pilot study the data collection for the main study was done. The data were collected by interviewing the patients. Then the progressive muscle relaxation therapy was administered for 20 to 30 minutes. The post intervention was conducted after 5th day by using the same tool to assess the effectiveness of progressive muscle relaxation therapy on reduction of stress and anxiety among patients undergoing cardiac surgeries.

The data collected was analyzed using descriptive and inferential statistics. Frequency and percentage distribution was used to determine the level of stress and anxiety among patients undergoing cardiac surgeries. Yates corrected chi square test was used to analyze the association of demographic variables with level of stress and anxiety among patient undergoing cardiac surgeries.

The major findings in the distribution of personnel demographic variables of study shows that the majority age of patients undergoing cardiac surgeries 11 (36.7%), with respect to gender of patients undergoing cardiac surgeries, the majority of the patients 21 (70.0%) were male and with regard to education, the majority of the patients 7 (23.3%) patients have completed primary education, 7 (23.3%) patients have completed secondary education.

In regard to occupation the majority of patients undergoing cardiac surgeries 8 (26.7%) were unemployed, Related to family income, the majority of patients 12 (40.0%) were getting the salary of Rs 5000-10000, Regarding type of family undergoing cardiac surgeries 15 (50.0%) were living in nuclear family, With respect to personal habit, the majority of patients undergoing cardiac surgeries 11 (36.7%) were drinking alcohol. Considering the dietary habit of patient undergoing cardiac surgeries 19 (63.3%) were non vegetarians.

With respect the type of cardiac illness 17 (56.7%) have coronary artery disease and 10 (33.3%) have valvular heart disease, considering the duration of cardiac illness 14 (46.7%) patients have below 3 month of duration of cardiac illness, Considering the co morbid condition the majority of cardiac patients 12

(40.0%) have hypertension. Regarding the family history of cardiac problem the majority of18 (60.0%) has no history of cardiac problem.

The data analysis revealed that there was significant relationship between the progressive muscle relaxation therapy on reduction of stress and anxiety among patients undergoing cardiac surgeries. The pre intervention mean score of stress was 29.93 with standard deviation of 3.49 and in post intervention mean score of stress was 18.70 with standard deviation of 3.64. The difference between pre and post intervention score of stress was decreased from 29.93 to 18.70. The pre intervention mean score of anxiety was 64.63 with standard deviation of 5.34 and in post intervention mean score was 49.13 with standard deviation of 8.57. Hence it indicates the effectiveness of progressive muscle relaxation therapy on reduction of stress and anxiety among patients undergoing cardiac surgeries.

CONCLUSION

The present study was the effectiveness of progressive muscle relaxation therapy. The study finding revealed that there was significant reduction in level of stress and anxiety after giving progressive muscle relaxation therapy. Based on the statistical findings it is evident that provision of such kind of therapy will motivate the elderly and help them to reduce the stress and anxiety level for before and after surgery. Therefore the progressive muscle therapy is very important to provide the quality nursing care which helps to meet the needs of thepatients undergoing cardiac surgeries.

NURSING IMPLICATION

The finding of the study has implications in various areas of nursing services, nursing education, nursing administration and nursing research.

Nursing Practice

Nursing personnel plays a vital role in promoting health and rehabilitation to the cardiac patients and progressive muscle relaxation therapy and techniques. It can

enhance cardiac surgery patients for dropping their stress and anxiety. Continuous nursing education and included with class demonstration can be given, Corresponds to the aspect of progressive muscle relaxation therapy among patient undergoing cardiac surgeries.

The effect of the study can be employ by all nurses to support and empowering them more knowledge regarding the progressive muscle relaxation techniques. The result of the study helps for the nurse to develop skills in providing efficient nursing care for the effective management of stress and anxiety. The nurse can develop the technique such as individual and group teaching to educate about progressive muscle relaxation technique to reduce stress and anxiety.

Nursing Education

Students can study the significance of progressive muscle relaxation therapy to reduce their day today stress and anxiety measures. The result can be used as a sample by the tutor in the classroom for giving reputation to relaxation.

Both the teachers and student can involve themselves in inspirational the practical area of nursing. Explain and demonstrate the students for effective utilization of research based practice regarding on progressive muscle relaxation therapy among patients undergoing cardiac surgeries. Educate the students to make use of existing literature to prevent the stress and anxiety through periodic seminars and group discussion on progressive muscle relaxation therapy among patients undergoing cardiac surgeries.

Nursing Administration

Nursing administration can articulates the policies that will take account of all nursing staff to be actually involved in relaxation training programme in their respective to hospital and colleges. Nursing administration can employ the relaxation training programme while conducting in service education program for directing and motivating the staff towards patients undergoing cardiac surgeries.

Nursing administration have more responsibility as administrator on creating awareness regarding stress and anxiety among patient undergoing cardiac surgery, free distribution of booklets, handout, and charts regularly in patients in and outpatient department of hospital, health clinics in urban and rural . A separate continuous nursing education department can be organized which can play a major role in education the registered nurses.

Nursing Research

This study can be effectively utilized by the evolving researchers for their reference and research purpose. Extensive research must be conducted in progressive muscle relaxation to identify several more effective methods for patient's education and prevention of complication in the other major surgeries. The study can be done in all fields to assess the reduction in their stress level. The study can be a base line for further studies to build upon and motivate the other investigator to conduct further studies in this are in different aspects

RECOMMENDATIONS

- The same study can be conducted with large samples
- A similar can be conducted in community setting.
- A longitudinal study can be done using post intervention after one month, six month, and after one year to assess the effectiveness of progressive muscle relaxation therapy.
- A comparative study can be done among patients with cardiac surgeries and other major surgeries.

LIMITATIONS

During the period of study the investigator faced the difficulties of short duration in data collection and intervention. When teaching first day the investigator felt difficulties and the old age patients could not able to follow the instruction. The study sample size was small and samples were selected by non random method limiting the generalize ability.

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NET SOURCES

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- http://www.pubmed.com
- http://www.yahoo.com.
- http://www.anxiety reduction.com.
- http://www.ncbi.nlm.nih.gov.
- http://www.applied nursing research.com
- http:/www.google.com

APPENDICES

APPENDIX - A

PART I

DEMOGRAPHIC VARIABLES

1. Age in years
    a. 35 – 45 year
    b. 46 – 55 year
    c. 56 – 65 year
    d. < 65 year
2. Sex
    a. Male
    b. Female
3. Education
    a. Illiterate
    b. Primary
    c. Secondary
    d. Higher secondary
    e. Graduate
4. Occupation
    a. Unemployee
    b. Private employee
    c. Government employee
    d. Retired person
5. Family income
    a. > 5000
    b. 5000 – 10000
    c. 10000 – 20000
    d. < 20000
6. Marital status
    a. Single
    b. Married
    c. Widow / Widower

7. Types of family
    a. Nuclear family
    b. Joint family
8. Personal habits
    a. Tobacco chewing
    b. Smoking
    c. Alcoholism
    d. None
9. Dietary pattern
    a. Vegetarian
    b. Non Vegetarian
10. Type of illness
    a. Coronary artery disease
    b. Valvular heart disease
    c. Cynotic and Acynotic heart disease
11. Duration of illness
    a. > 3months
    b. 3 - 6 months
    c. 6 months – 1 year
    d. < 1 year
12. Co morbid condition
    a. Hypertension
    b. Diabetes mellitus
    c. Any other disease :
    d. Nil
13. Did any of your family members suffered with cardiac problems
    a. Yes
    b. no

PART II

MODIFIED COHEN PERCEIVED STRESS SCALE

Place check mark (✓) in correct column.	**Almost never 1**	**Some Times 2**	**Fairly often 3**	**Very often 4**
1) How often have you been upset because of something that happened unexpectedly?				
2) How often have you felt that you were unable to control the important things in your life?				
3) How often have you felt nervous and "stressed"?				
4) How often have you felt confident about your ability to handle your personal problems?				
5) How often have you felt that things were going your way?				
6) How often have you found that you could not cope with all the things that you had to do?				
7) How often have you been able to control irritations in your life?				
8) How often have you felt that you were on top of things?				
9) How often have you been angered because of things that were outside of your control?				
10) How often have you felt difficulties were piling up so high that you could not overcome them?				

ZUNG SELF ANXIETY SCALE

Place check mark (✓) in correct column.	**A little of the time 1**	**Some of the time 2**	**Good part of the time 3**	**Most of the time 4**
1) I feel more nervous and anxious than usual.				
2) I feel afraid for no reason at all.				
3) I get upset easily or feel panicky.				
4) I feel like I'm falling apart and going to pieces.				
5) I feel that everything is all right and nothing bad will happen				
6)My arms and legs shake and tremble.				
7) I am bothered by headaches neck and back pain				
8) I feel weak and get tired easily.				
9) I feel calm and can sit still easily				
10) I can feel my heart beating fast				
11) I am bothered by dizzy spells				
12) I have fainting spells or feel like it.				
13) I can breathe in and out easily				
14) I get feelings of numbness and tingling in my fingers & toes				
15) I am bothered by stomach aches or indigestion				
16) I have to empty my bladder often				
17) My hands are usually dry and warm				
18) My face gets hot and blushes				
19 I fall asleep easily and get a good night's rest				
20) I have nightmares.				

பகுதி - 1

மக்கள்தொகைமாறிகள்

1) வயது

   அ) 35-45 வருடங்கள்

   ஆ) 46-55 வருடங்கள்

   இ) 56-65 வருடங்கள்

   ஈ) > 65 வருடம்

2) பாலினம்

   அ) ஆண்

   ஆ) பெண்

3) கல்வித்தகுதி

   அ) எழுதப்படிக்கதெரியாது

   ஆ) முதன்மைகல்வி

   இ) இரண்டாம்நிலைகல்வி

   ஈ) பட்டதாரி

4) தொழில்

   அ) வேலையின்மை

   ஆ) சுயவேலை

   இ) அரசாங்கவேலை

   ஈ) ஓய்வுபெற்றநபர்

5) குடும்பவருமானம்

   அ) <ரூ 5000

   ஆ) ரூ 5000 முதல் ரூ 10000 வரை

   ஆ) ரூ 10000 முதல் ரூ 20000 வரை

   இ) ரூ 20000 அதிகமாக

6) திருமணநிலை

   அ) திருமணமாகாதவர்

   ஆ) திருமணம்ஆனவர்

   இ) விதவை / மனைவியின்இழப்பு

   ஈ) விவாகரத்துபெற்றனர்

7) குடும்பவகை

அ) கூட்டுகுடும்பம்

ஆ) தனிக்குடும்பம்

8) தனிப்பட்டபழக்கம்

அ) புகையிலைபழக்கங்கள்

ஆ) புகைத்தல்

9) உணவுப் பழக்கம்

அ) சைவம்

ஆ) அசைவம்

10) உடல்நலக்குறைவின் வகைகள்

அ) கரோனரிஇதயநோய்

ஆ) வால்வுஇதயநோய்

இ) சயநோடிக் மற்றும்எசயநோடிக்இதயநோய்

11) உடல்நலக்குறைவின் காலம்

அ) > 3 மாதங்கள்

ஆ) 3-6 மாதங்கள்

இ) 6மாதம் -12 வருடங்கள்

ஈ) >1 வருடங்கள்

12) மற்றநோய்கள்

அ) இரத்தஅழுத்தநோய்

ஆ) நீரிழிவுநோய்

இ) மற்றவை

ஈ) ஏதும்இல்லை

13) உங்கள்குடும்பத்தில்யாரேனும்இருதயநோயால்பதிக்கப் பட்டுள்ளர்கள

அ) ஆம்

ஆ) இல்லை

பகுதி - 2

மாற்றியமைக்கப்பட்ட கோகென் மன அழுத்தத்தை அளக்கும் அளவுகோள்

வ. எண்	பொருள்	எப்பொழுதும் இல்லை 1	சில சமயங்களில் 2	எப்பொழுதாவது 3	எப்பொழுதும் 4
1	எதிர்பாராதவிதமாக நடந்ததற்காக எப்பொழுதெல்லாம் நீங்கள் மனம் தளர்வடைந்துள்ளீர்கள்?				
2	நீங்கள் உங்கள் வாழ்வில் முக்கியமான வேலைகளைச் செய்ய முடியாததற்கு எப்பொழுதெல்லாம் வருத்தப் பட்டிருக்கிறீர்கள்?				
3	நீங்கள் எப்பொழுதெல்லாம் மன அழுத்தத்தையும் படபடப்பையும் உணர்ந்திருக்கிறீர்கள் ?				
4	நீங்கள் எப்பொழுதெல்லாம் தன்னம்பிகையுடன் பிரச்சனைகளை எதிர் கொண்டதாக உணர்ந்தீர்கள் ?				
5.	எப்பொழுதெல்லாம் நீங்கள் நினைத்தது நடந்ததாக உணர்கிறீர்கள் ?				
6	எப்பொழுதெல்லாம் உங்களால் செய்ய முடிந்த செயல்களைச் செய்ய செயல்களைச் செய்ய இயலாமல் போனதாக உணர்ந்தீர்கள் ?				
7	எப்பொழுதெல்லாம் உங்கள் வாழ்வில் எரிச்சலைக் கட்டுப்படுத்த முடிந்ததாக உணர்ந்தீர்கள் ?				
8	எப்பொழுதெல்லா முதல் நிறை வகித்ததாக உணர்ந்தீர்கள் ?				
9	எப்பொழுதெல்லாம் உங்கள் செயல் உங்களை கைமீறிப் போனதற்காக கோபப்பட்டிருக்கிறீர்கள் ?				
10	எப்பொழுதெல்லாம் உங்கள் கஷ்டங்கள் தாண்டி வர முடியவில்லை என்று நினைத்திருக்கிறீர்கள் ?				

ஜீங் சுய மதிப்பீடு கவலை அளவுகோள்

வ. எண்	சரியான நெடுவரிசையில் உள்ள செக் குறி வைக்கவும்.	ஒரு சிறிய காலம்	சில காலம்	சிறந்த பகுதி நேரம்	பெரும் பாலான காலம்
1	நான் வழக்கத்தைவிட அதிக பதற்றம் மற்றும் மனக்கவலையடையவர்				
2	நான் காரணம் இல்லாமல் பயப்படுகிறேன்				
3	நான மிகவும் எளிதாக கோபம் அல்லது பதற்றத்தை உணர்கிறேன்				
4	நான் வீழ்ச்ச அடைவது போலும் சிதைந்து போவது போலும் உணர்கிறேன்				
5	நான் எல்லாம் சரி என்று உணர்கிறேன் மற்றும் மோசமாக எதுவும் நடகாது என்றும் உணர்கிறேன்				
6	எனது கைகள் மற்றும் கால்கள குலுக்கல் மற்றும் நடுங்குகிறது				
7	நான் தலைவலி கழுத்து மற்றும். முதுகு வலியால் கவலையாக உள்ளேன்.				
8	நான் பலவீனமாக உணர்கிறேன மறறும் எளிதில் சோர்வடைகிறேன்				
9	நான் அமைதியாக உணர்கிறேன் மற்றும் எளிதில் இன்னும் உட்கார முடியாது				
10	என்னால் என் இதயம் வேகமாக துடிக்கிறது உணர முடியும்				
11	நான் மயக்க உணர்வு மூலம் கவலை படுகிறேன்				
12	நான் மயக்கம் அடைவது போல உணர்கிறேன்				
13	என்னால் எளிதாக மூச்சுவிட முடியும்				
14	நான் உணர்வின்மை மற்றும் கிளர்ச்சியை என் கை விரல்கள் மற்றும் கால் விரல்களில் உணர்கிறேன்				
15	நான் வயிற்று வலி மற்றும் அஜீரணத்தினால் கவலையாக உள்ளேன்				
16	நான் அடிக்கடி என் சிறுநீர்ப்பை காலி செய்கிறேன்				
17	என் கைகளில் பொதுவாக உலர்ந்து மற்றும் சூடாக உளளன				
18	என் முகம் சூடாக இருப்பதுபோல் தோன்கிறது				
19	நான் எளிதாக தூங்குகிறேன் இரவு முழுவதும்				
20	நான கனவுகள் காண்பது உண்டு				

APPENDIX – B

CERTIFICATE OF ETHICAL CLEARANCE

MADHA COLLEGE OF NURSING
ETHICAL COMMITTEE

College Campus :
Madha nagar,
Somangalam road,
Kundrathur,
Chennai -69

Chairman of Committee:

Dr. S. Madan kumar. M.D., Dip. A & E
Director,
Madha Medical College & Research Institute,
Thandalam.

Members:

Dr. K. Gajendran. M.D., D.V.,
Principal,
Madha Medical College & Research Institute, Thandalam.

Dr. A. Dhanikachalam. M.S., Mch
Medical Superintendent,
Madha General Hospital,
Madha Medical College & Research Institute, Thandalam.

Dr. V. Vijai Krishna. M.P.T,
Principal,
Madha College of Physiotherapy,
Kundrathur.

Dr. B.Tamilarasi, M.Sc (N), P.hD.,
Principal,
Madha College of Nursing, Kundrathur.

Mrs. Grace Samuel, M.Sc (N),
Vice Principal,
Madha College of nursing, Kundrathur.

Date : 15.03.2013

CERTIFICATE OF ETHICAL CLEARANCE

This is to certify that the research proposal, **"Effectiveness of Progressive muscle relaxation therapy on stress and anxiety among patients undergoing Cardiac surgeries at Dr. Kamakshi Memorial Hospital at Chennai"**, submitted by Ms. Blessy Mathew, student of I year M.Sc Nursing (Medical Surgical Nursing) is hereby approved and granted ethical clearance by the Ethical Committee of the institute.

This clearance is valid for the period of 2 years.

CHAIRMAN

APPENDIX C

LIST OF EXPERTS FOR CONTENT VALIDITY

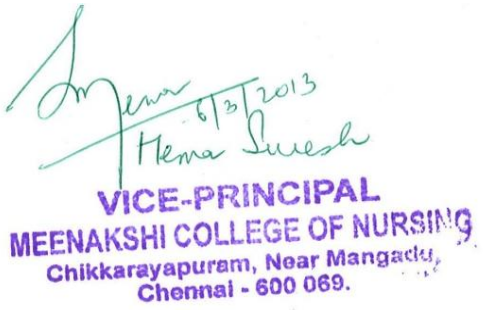
Mrs. HEMA SURESH, R.N., R.M., M.Sc.(N).,
Vice Principal,
Meenakshi College Of Nursing,
Chikkarayapuram, Chennai-600069

Mrs. JAYA SRI, R.N., R.M., M.Sc.(N).,
Principal,
Miot College of Nursing,
Porur, Chennai-600069

DR. PREMANAND PRONOTH
Chief CTVS surgeon,
Dr. Kamakshi Memorial Hospital,
pallikaranai, Chennai – 600 100,
Tamil Nadu.

CERTIFICATION FOR CONTENT VALIDITY

This is to certify that the content and the tool to the statement of the problem **"A Study to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing Cardiac Surgeries in Dr. kamakshi Memorial Hospital at Chennai"** prepared by **Ms. Blessy Mathew**, **M.sc(N)IYear** student currently pursuing her M.sc(N) degree programme for the partial fulfillment of her dissertation at **Madha College of Nursing, Kundrathur**, **Chennai-69** is found to be valid to the best of my knowledge.



CERTIFICATION FOR CONTENT VALIDITY

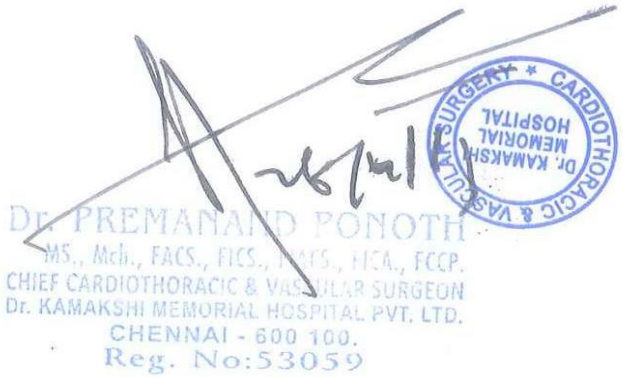
This is to certify that the content and the tool to the statement of the problem **"A Study to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing Cardiac Surgeries in Dr. kamakshi Memorial Hospital at Chennai"** prepared by **Ms. Blessy Mathew**, **M.sc(N)IYear** student currently pursuing her M.sc(N) degree programme for the partial fulfillment of her dissertation at **Madha College of Nursing, Kundrathur**, **Chennai-69** is found to be valid to the best of my knowledge.

4/3/2013

PRINCIPAL
MIOT COLLEGE OF NURSING
No.1/70, Mariamman Koil Street,
Mugalivakkam, Chennai - 116.

CERTIFICATION FOR CONTENT VALIDITY

This is to certify that the content and the tool to the problem " **A Study to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing Cardiac Surgeries at Dr.kamakshi memorial hospital, Pallikaranai, Chennai"** prepared by **Ms. Blessy Mathew, M.sc (N)II Year** student currently pursuing her M.sc(N) degree programme for the partial fulfilment of her dissertation at **Madha College of Nursing, Kundrathur, Chennai-69** is found to be valid to the best of my knowledge.



APPENDIX – D

Dr.Kamakshi Memorial Hospital Pvt. Ltd.
No.1, Radial Road, Pallikkaranai, Chennai-600100
E-mail Id: academicboard@drkmh.com

Academic Section

Dr.S.RAJALAKSHMI.,M.D.(Path.)., Phone: (044) 66300300 Ext.113
ACADEMIC OFFICER

Lr.No.Acad.A(12)/012/2013 / Dated:29.04.2013

To
Dr.B.Tamilarasi.,M.Sc.,M.Phil.,Ph.D.
Principal,
Madha College of Nursing,
Madha Nagar, Somangalam Road,
Kundrathur,
Chennai-600 069, INDIA
Phone: (044) 2478 0736

Madam,

Sub:- ACADEMICS – Project in Cardiothoracic Department for One Month – First Year PG Nursing – Permission – Reg.

Ref:- Your Letter No.NIL dated 25.04.2013.

****

With reference to your letter cited above, we would like to inform that it is approved that the candidate Ms.Blessy Mathew., I – M.Sc.(N) of your institution to carry out the Project in Cardiothoracic Department under the guidance of Dr.Premanand Ponoth., (Chief Cardiothoracic and Vascular Surgeon) of our Hospital from 06.05.2013 to 06.06.2013 (one month).

2. A nominal fee of Rs.1500/- (Rupees One thousand and five hundred only) shall be paid at the earliest.

3. It is also expected that the candidates shall abide the rules and regulations of Hospital Administration during the project period.

4. The receipt of this letter may kindly be acknowledged.

Yours faithfully,

For ACADEMIC OFFICER

Copy forwarded for the information to:-
(1) Head, Dept. of Cardiothoracic Surgery
(2) Stock File

APPENDIX – E

Letter seeking consent of the subject for the participation in the research study

I am voluntarily willing to participate in the study conducted by Ms. Blessy mathew, **on "A study to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patient undergoing cardiac surgeries at Dr kamakshi memorial hospital at Chennai".** I was also co-operative with the researcher in providing necessary information. I was explained that the information provided would be kept in confidential and used only for above mentioned study purpose.

Signature of the investigator

Place: pallikkaranai

Date: 10/5/2013

signature of the patient

Place pallikkaranai

Date: 10/5/2013

APPENDIX –F

CERTIFICATE FOR ENGLISH EDITION

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation "**A Study to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing Cardiac Surgeries in Dr.Kamakshi Memorial Hospital at Chennai,"** prepared by **Ms. Blessy Mathew, II year m.sc Nursing,** student **Madha college of Nursing, Kundrathur, Chennai-69** is edited for English language appropriateness.

Name : KARTHIK.S

Signature:

GOVT. HIGHER SECONDARY SCHOOL,
ANANTHARURAM-682 315. T.V.Thai Dr.

CERTIFICATE FOR TAMIL EDITION

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation "**A Study to assess the effectiveness of progressive muscle relaxation therapy on stress and anxiety among patients undergoing Cardiac Surgeries in Dr. kamakshi memorial hospital at Chennai,"** prepared by **Ms Blessy Mathew, II year m.sc Nursing,** student **Madha college of Nursing, Kundrathur, Chennai-69** is edited for Tamil language appropriateness.

Name :

Signature:

HEADMASTER
GOVT. HIGHER SECONDARY SCHOOL,
ANANTHARURAM-632 315. T.V.Malai. Dt.

KOSHA YOGA STUDIO
#317,G.S.T Road, Chrompet, Chennai, India.
Tel/Fax:+91 44 22414114 Cell:+91 9884944902.
Email: koshayoga@yahoo.com
www.koshayoga.in

Date: 15/04/2013.

CERTIFICATE

This is to certify that Ms.Blessy Mathew has undergone intensive yoga training program in our institution from 15th March 2013 to 15th April 2013

For KOSHA YOGA STUDIO
15/4/2013
Authorised Signatory

APPENDIX –G

PROGRESSIVE MUSCLE RELAXATION THERAPY

A **relaxation technique** (also known as **relaxation training**) is any method, process, procedure, or activity that helps a person to relax for attain a state of increased calmness or reduce levels of anxiety, stress or anger. Relaxation techniques are often employed as one element of a wider stress management program and can decrease muscle tension, lower the blood pressure and slow heart and breath rates, among other health benefits

Progressive muscle relaxation or PMR is a particular type of relaxation exercise that requires a person to alternate between tensing and relaxing different muscle groups throughout the body.Jacobson's relaxation technique, also called progressive relaxation therapy, and was developed by Dr. Edmund Jacobson over half a century ago. Jacobson developed over 200 exercises and techniques. It relax the entire body by releasing muscular tension that accumulates as a person experiences a stressful situation. It will help to reduces the intensity of pain, and relieve stress and anxiety.

IMPORTANCE OF PROGRESSIVE MUSCLE RELAXATION THERAPY

Progressive Muscle Relaxation (PMR) therapy involves sequential tensing and relaxation of major skeletal muscle groups and aims to reduce feelings of tension, to lower perceived stress, and to induce relaxation. Progressive muscle relaxation therapy is purported to decrease the arousal of the autonomic and central nervous system and to increase parasympathetic activity.

Stress and anxiety have been linked to numerous ailments, including heart disease, high blood pressure, atherosclerosis, irritable bowel syndrome, ulcers, anxiety disorders, insomnia, and substance abuse. Stress can also cause physical symptoms, including nausea, headache, hair loss, fatigue, and muscle pain.

Relaxation therapies have been shown to reduce the incidence and severity of stress-related diseases and disorders in many patients.

PROGRESSIVE MUSCLE RELAXATION TECHNIQUE

The progressive muscle relaxation consist of mainly two steps:

STEP ONE: TENSION

The first step is applying muscle tension to a specific part of the body. This step is essentially the same regardless of which muscle group is targeting. First, focus on the target muscle group, for example, your left hand. Next take a slow, deep breath and squeeze the muscles as hard as for about 5 seconds. It is important to really feel the tension in the muscles.

STEP TWO: RELAXING THE TENSE MUSCLES

This step involves quickly relaxing the tensed muscles. After about 5 seconds, let all the tightness flow out of the tensed muscles and the same time exhale also doing on this step, it feel the muscles become loose and limp, as the tension flows out. It is important to very deliberately focus on and notice the difference between the tension and relaxation. This is the most important part of the whole exercise.

INSTRUCTIONS FOR RELAXATION THERAPY

- Make as comfortable as possible in a seated position
- If patient wearing glasses or contact lenses and ask her to remove them before starting the exercise.
- Instruct the patient not to fall asleep.

- Practice on an empty stomach. Food digestion after meals will tend to disrupt deep relaxation
- Practice at regular times. On awakening, before retiring, or before meals are generally the best times.
- Advice to the patient to make a decision not to worry about anything and having peace of mind to take precedence over any of all worries
- While tensing the muscle if the patient felt pain then tense the muscle for only 2 seconds which is generally sufficient.
- Be free of any worry about how well you are performing the technique. Do not try to relax. Do not try to control your body. Do not judge the performance. The point is to let go

Tensing and Relaxing Specific Muscle Groups

Relaxation of the Forehead:

- Raise eyebrows up and tense the muscles across the forehead and scalp.
- Feel the tension build and hold the tension,then relax slowly.
- At the same time take a deep breath, hold and then release.

Relaxation of the Jaw and Facial muscles:

- Clench the teeth together.
- Tense the muscles in the back of your jaw.
- Turn the corners of your mouth into a tight smile.
- Wrinkle the bridge of the nose and squeeze the eyes shut.
- Tense all facial muscles in toward the centre of the face.
- Feel the tension build and hold the tension, then relax.
- At the same time take a deep breath,hold and then release.

Relaxation of the Chin, Neck, and Shoulders:

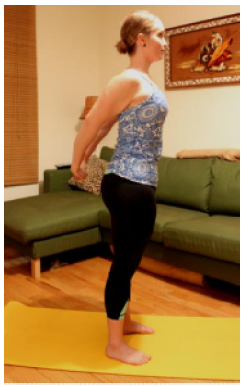
- Drop the chin to the chest.
- Draw the shoulders up toward the ears.
- Feel the tension build and hold the tension,then relax
- At the same time take a deep breath hold and then release.

Relaxation of the Arms and Palms of the Hands

- Turn palms face down and make a tight fist in each hand.
- Raise and stretch both arms with fists.
- Feel the tension build and hold the tension,then relax
- At the same time take a deep breath hold and then release.

Relaxation of the upper back:

- Draw the shoulder blades together to the midline of the body
- Contract the muscles across the upper back.
- Feel the tension build and hold the tension,then relax
- At the same time take a deep breath hold and then release.

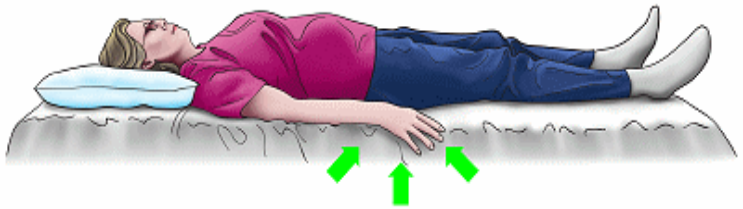


Relaxation of the abdomen:

- Observe your abdomen rising and falling with each breath.
- Inhale and press the navel toward the spine then tense the abdomen.
- Feel the tension build and hold the tension, then relax.
- At the same time take a deep breath hold and then release.

Relaxation of the hips:

- Tense the buttock muscles by squeezing them inward and upward.
- Feel the tension build and hold the tension,then relax.
- At the same time take a deep breath hold and then release.

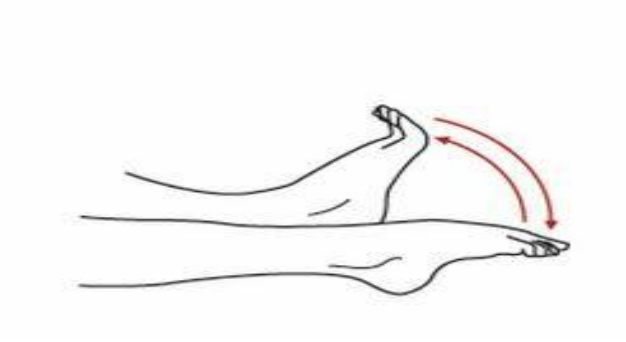


Relaxation of the knees and upper thighs:

- Straighten the knees and squeeze the legs together.
- Contract the thigh muscles and all the muscles of the legs.
- Feel the tension build and hold the tension,then relax.
- At the same time take a deep breath hold and then release.

Relaxation of the feet and calves:

- Flex the feet (pull toes toward the knees)
- Contract calf muscles and muscles of lower leg
- Feel the tension build and hold the tension,then relax.
- At the same time Take a deep breath hold and then release.



Finishing the Tense & Relax Exercise:

- Count backwards in the head from 3 to 1.
- a) 3 – become aware of the surroundings (location, people, noises).
- b) 2 - Move the feet, legs, hands, arms, rotate the head.
- c) 1 – open the eyes feeling re-energized, refreshed, and relaxed.
- Finally imagine a wave of relaxation slowly spreading throughout the body, starting at the head and gradually penetrating every muscle group all the way down to toes.

The entire progressive muscle relaxation sequence should take you 20-30 minutes the first time. With practice you may decrease the time needed to 15-20 minutes.

பிற்கேர்க்கை - எ

முற்போக்கான தவையை தளர்த்தும் உடற்பயிற்சி

தளர்வு நுட்பம் (அல்லது தளர்வு பயிற்சி) என்பது ஒரு வகையான செயல்முறை, அல்லது நடைமுறை அல்லது செயல் ஆகும். அவை ஒருவர் அமைதியாகன சூழ்நிலை அடைவதற்கும் மேலும் பயம், மன அழுத்தம், கோபம் ஆகியவற்றை குறைப்பதற்கு உதவுகிறது. மன அழுத்தம் மேலாண்மை திட்டத்தில் ஒன்றன் பகுதுயாக தளர்வு நுட்பம் செயல்படுகிறது. இவை தசை இறுக்கம் மற்றும் இரத்த அழுத்தத்தை குறைப்பதோடு இதய துடிப்பின் விகிதத்தையும், மூச்சு விகிதத்தையும் சீராக வைத்து விடும்.

முற்போக்கான தசையை தளர்த்தும் உடற்பயிற்சி என்பது ஒரு குறிப்பிட்ட வகையான உடற்பயிற்சி. இந்த உடற்பயிற்சியை செய்வதற்கு ஒருவர் தனது உடம்பிலுள்ள தசையை சுருக்கி பின்பு தளர்வு செய்ய வேண்டும். ஜேக்கப்சன்ஸ் தசையை தளர்த்தும் டாக்டர். எட்மண்ட் ஜேக்கப் என்பவர் கண்டுபிடித்தார். ஜேக்கப்ஸன் ஏறக்குறைய 200 உடற்பயிற்சிகளை கண்டுபிடித்தார். இந்த உடற்பயிற்சிகள் உடம்பில் உள்ள தசையை தளர்வடைய செய்வதின் மூலம் தசை இறுக்கத்தை குறைப்பதோடு மன அழுத்தத்தையும் குறைத்துவிடும். மேலும் இவை தீவரமான வலி மற்றும் பயத்தை நீக்குவதற்கு உதவுகிறது.

தவையை தளர்த்தும் உடற்பயிற்சியின் முக்கியத்துவம்

தசையை தளர்த்தும் உடற்பயிற்சியின் போது தசையை சுருக்கி பின்பு தளர்த்துவதின் மூலம் தசை இறுக்கம் மற்றும் மன அழுத்தம் குறைந்துஒருவர் தளர்வான நிலை அடைவர். தசையை தளர்த்தும் உடற்பயிற்சி தன்னாட்சி மற்றும் மைய நரம்பு மண்டலம் விழிப்புணர்வு அடைவதை குறைத்துவிட்டு பாராஸிம்பதெட்டிக் நடவடிக்கையை அதிகரிக்க செய்யும். இதய நோய், அதிக இரத்த அழுத்தம், தமனி துடிப்பு, எரிச்சல் கொண்ட குடல் நோய், குடல் புண், பயம், தூக்கமின்மை ஆகியவற்றோடு மன அழுத்தம் மற்றும் தலைவலி, முடி உதிர்தல், சோர்வு, தலைவலி போன்ற உடல் சம்மந்தமான பிரச்சினைகளை ஏற்படுத்தும். தளர்வு பயிற்சிகள் மன அழுத்தம் சம்மந்தமான நோய்களை குறைக்க உதவுகிறது. தசையை தளர்த்தும் உடற்பயிற்சி வலி, தசை இறுக்கம், சோர்வு, தூக்கம் சம்மந்தமான வியாதிகள், மன அழுத்தம், அதிக இரத்த அழுத்தம், குறைந்த ஆற்றல், அரைத்தூக்க நிலை, பயம், கோபம்

முற்போக்கான தசையை தளர்த்தும் உடற்பயிற்சியின் நுட்பங்கள் :

இந்த உடற்பயிற்சியில் இரண்டு படிகள் காணப்படும்.

படி ஒன்று : இறுக்கம்

முதலில் உடம்பின் குறிப்பிட்ட பகுதியில் உள்ள தசையை இறுக்கமாக வைக்க வேண்டும். முதன்மையாக இலக்கு தசைகளில் கவனம் செலுத்த வேண்டும் (எடுத்துக்காட்டாக : உ;ஙகள் இடது கை). பின்பு மெதுவாக ஆழமான மூச்சு எடுத்து குறிப்பிட்ட தசை பகுதியை 5 வினாடிகள் இறுக்க வேண்டும் தசைகளில் இறுக்கம் காணப்படுவதை கண்டிப்பாக உணர வேண்டும்.

படி இரண்டு : இறுக்கிய தசைகளை தளர்வு படுத்துதல்

இந்த படியில் இறுக்கிய தசைகளை தளர்வு படுத்த வேண்டும். தசையை இறுக்கிய 5 நொடிகளுக்கு பின்பு இதை செய்ய வேண்டும். இந்நிலையில் மூச்சு விட வேண்டும். இறுக்கம் மற்றும் தளர்வு ஆகியவற்றின் வித்தியாசத்தை உணர்வது மிகவும் நன்று. இதுதான் இந்த உடற்பயிற்சியின் முக்கிய பகுதி ஆகும்.

தளர்வு பயிற்சியின் விதிமுறைகள் :

- வசதியாக அமர்ந்த நிலையில் இருத்தல்.
- ஒரு வேளை நோயாளிகள் கண் கண்ணாடி அல்லது கண் லென்ஸ்கள் அணிந்திருத்தல் உடற்பயிற்சியின் முன்பு அவற்றை கழற்ற வேண்டும்.
- தூஙகி விழுவதை தவிர்க்க வேண்டும் என்று நோயாளிகளுக்கு அறிவுறுத்த வேண்டும்.
- வெறும் வயிற்றில் இந்த உடற்பயிற்சியை செய்ய வேண்டும்.
- உணவு உண்டபின் ஜீரணமாகுவது ஆழமான தளர்வு நிலைக்கு இடையூராக இருக்கும்.
- வழக்கமான நேரங்களில் உடற்பயிற்சின்மை மேற்கொள்ள வேண்டும். தூங்கி எழுந்த பின்பு, எல்லா பணிகளையும் முடித்து ஓய்வு எடுப்பதற்கு முன்பு அல்லது உணவு உண்பதற்கு முன்பு ஆகிய நேரங்கள் உடற்பயிற்சி செய்வதற்கு சிறந்த நேரமாகும்.

- அனைத்து கவலைகளையும் மறந்து அமைதியான மனதில் இந்த உடற்பயிற்சியை செய்ய வேண்டும் என்று அறிந்து அனைத்து நோயாளிகளும் முடிவு எடுக்க வேண்டும்.
- தசையை இறுக்கும்போது ஒருவேளை நோயாளிக்கு வலி ஏற்பட்டால், பின்பு 2 நொடிகள் மட்டும் தசையை இறுக்கமாக வைப்பதே மிகவும் போதுமானதாகும்.
- உடற்பயிற்சி செய்யும்போது ஒருவர் எப்படி செய்கிறோம் என்பதை நினைத்து கவலைப்படக் கூடாது.

குறிப்பிட்ட தசைகளை இறுக்கம் மற்றும் தளர்வு அடைய செய்தல்

நெற்றியை தளர்வு அடைய செய்தல்

- கண் புருவங்களை உயர்த்தி, நெற்றி மற்றும் உச்சந்தலையை இறுக்கமாக சுருக்க வேண்டும்.
- அத்தசை இறுக்கத்தை உணர வேண்டும் இறுக்கமாக பிடித்து பின்பு மெதுவாக விட வேண்டும்.
- அதே நேரம் ஆழமான மூச்சு இழுத்து எடுத்து, பின்பு மெதுவாக மூச்சு விட வேண்டும்.

தாடை மற்றும் முகத்தில் இருக்கும் தசைகளை தளர்வு அடைய செய்தல்

- பற்கள் இறுக்கமாக வைக்க வேண்டும்.
- தாடையின் பின்புறமாக உள்ள தசைகளை இறுக்கமாக வைக்க வேண்டும்.
- வாயின் இரண்டு முனைகளையும் விரிவாக திறந்து நன்றாக சிரிக்க வேண்டும்.
- மூக்கின் முனையை சுருக்கி, கண்களை இறுக்கமாக மூட வேண்டும்.

- முகத்தில் தசைகளை, முகத்திற்கு நேராக சுருக்க வேண்டும்
- அந்த இறுக்கத்தை உணர வேண்டும். சிறிது நேரம் அதை உணர்ந்து பின்பு தளர்ச்சி அடைய செய்ய வேண்டும்.
- அதே நேரம் மூச்சு இழுத்து, எடுத்து அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விட வேண்டும்.

மேல்வாய், கழுத்து மற்றும் தோள் ஆகிய பகுதிகளை தளர்வு அடைய செய்தல்

- தடை நெஞ்சை தொடும் அளவிற்கு குனியவும்
- தோள் காதை தொடும் அளவிற்கு உயர்த்தவும்
- தசை இறுக்கத்தை உணர்ந்த பின் தளர்த்தவும்
- அதே நேரம் மூச்சு இழுத்து எடுத்து, அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விடவும்ம

புறங்கை மற்றும் உள்ளங்கை ஆகிய பகுதிகளை தளர்வு அடைய செய்தல்

- உள்ளங்கையை கீழாக வைத்து கைகளை இறுக்கி பிடிக்கவும்.
- பின்பு கைகளை தூக்கி நேராக இழுக்கவும்.
- தசை இறுக்கத்தை உணர்ந்து பின் தளர்த்தவும்
- அதே நேரம் மூச்சு இழுத்து எடுத்து, அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விடவும்.

முதுகின் மேற்பகுதியை தளர்வு அடைய செய்தல்

- தோள்பட்டைகள் இரண்டையும் உடம்பிற்கு நேராக ஒன்றினைக்க வேண்டும்.
- பின்பு முதுகில் மேற்பகுதி தசைகளை இறுக்கமாக பிடிக்கவும்
- அந்த தசை இறுக்கத்தை உணர வேண்டும். சிறிது நேரம் அதை உணர்ந்து பின்பு தளர்ச்சி அடைய செய்ய வேண்டும்.
- அதே நேரம் மூச்சு இழுத்து எடுத்து, அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விட வேண்டும்.

வயிற்று பகுதியை தளர்வு அடைய செய்தல்

- மூச்சு எடுத்து பின்பு மூச்சு விடும்போது வயிற்றுப்பகுதி உயர்வதையும் தாழ்வதையும் கவனிக்க வேண்டும்.
- மூச்சை இழுத்து எடுத்து, வயிற்றுப்பகுதியை உள்நோக்கி இழுக்க வேண்டும்.
- அந்த தசை இறுக்கத்தை உணர வேண்டும் சிறிது நேரம் அதை உணர்ந்து பின்பு தளர்ச்சி அடைய செய்ய வேண்டும்.
- அதே நேரம் மூச்சு இழுத்து எடுத்து, அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விட வேண்டும்.

இடுப்பு பகுதியை தளர்வு அடை செய்தல்

- இடுப்பு பகுதியில் இருக்கும் தசைகளை உள்ளாக மேல் பக்கமாக இறுக்க வேண்டும்.
- அந்த தசை இறுக்கத்தை உணர வேண்டும். சிறிது நேராக அதை உணர்ந்து பின்பு தளர்ச்சி அடைய செய்ய வேண்டும்.
- அதே நேரம் மூச்சு இழுத்து எடுத்து, அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விட வேண்டும்.

மூட்டு மற்றும் மேல் தொடை பகுதிகளை தளர்வு அடைய செய்தல்

- மூட்டு பகுதியை நேராக வைத்து பின்பு கால்களை ஒருமித்து இறுக்கமாக வைக்கவும்.
- பின்பு தொடை பகுதியில் உள்ள தசைகளையும் இறுக்கமாக வைக்கவும்.
- அந்த தசை இறுக்கத்தை உணர வேண்டும். சிறிது நேரம் அதை உணர்ந்து பின்பு தளர்ச்சி அடைய செய்ய வேண்டும்.
- அதே நேரம் மூச்சு இழுத்து எடுத்து, அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விட வேண்டும்.

பாதம் மற்றும் காப்ஸ் பகுதிகளை தளர்வு அடைய செய்தல்

- பாதங்களை மூட்டு பகுதியை நோக்கி உள்ளே இழுத்து பிடிக்கவும்.
- காலில் உள்ள தசைகளை இறுக்கி பிடிக்கவும்.
- அந்த தசை உணர்ந்து பின்பு தளர்ச்சி அடைய செய்ய வேண்டும்.
- அதே நேரம் மூச்சு இழுத்து எடுத்து, அதை உணர்ந்து பின்பு மெதுவாக மூச்சு விட வேண்டும்.

உடற்பயிற்சியை முடிவடைய செய்தல்

அ) மூன்றிலிருந்து ஒன்றுவரை (3-1) பின்புறமாக எண்ண வேண்டும் .

ஆ) சுற்றுப்புறத்தை பற்றி கவனமாக இருக்க வேண்டும் (இடம், மக்கள், சத்தம்)

இ) பாதம், கால், கை ஆகியவற்றை சிறிது தள்ளி வைத்து பின்பு தலையை சுழற்ற வேண்டும்.

ஈ) கண்களை திறந்து மீண்டும் ஆக்கம், ஆற்றல் அடைந்ததை உணர வேண்டும்.

இறுதியாக தலையிலிருந்து கால்வரை உள்ள தசைகள் தளர்வடைவதை உணர வேண்டும். முதல் முறை ஒரு முறையான முற்போக்கான தசையை தளர்த்தும் உடற்பயிற்சி செய்வதற்கு தசையை உடற்பயிற்சி செய்வதற்கு 20-30 நிமிடங்கள் தேவைப்படும். ஆனால் பயிற்சி இருந்தை அதை 15-20 நிமிடமாக குறைக்கலாம்.